

**Environmental Assessment for
Closure of Cesspools and
Implementation of Wastewater
Management and Treatment
Measures
Bellows Air Force Station, Hawai'i**

Prepared For:

Bellows Air Force Station

20 June 2014

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FINDING OF NO SIGNIFICANT IMPACT

CLOSURE OF CESSPOOLS AND IMPLEMENTATION OF WASTEWATER MANAGEMENT AND TREATMENT MEASURES AT BELLOWES AIR FORCE STATION, HAWAII

Pursuant to provisions of the National Environmental Policy Act (NEPA), 42 United States Code (USC) 4321 to 4370d; implementing Council on Environmental Quality (CEQ) regulations; and 40 *Code of Federal Regulations* (CFR) 1500-1508 and 32 CFR Part 989, Environmental Impact Analysis Process, the U.S. Air Force (USAF) assessed the potential environmental consequences associated with closing 29 large capacity cesspools (LCCs) and implementing new wastewater management methodologies for 26 cabins on Bellows Air Force Station (AFS), Hawaii.

BACKGROUND

The U.S. Environmental Protection Agency (USEPA) banned residential LCCs on 5 April 2005 and required that existing LCCs be closed in accordance with local regulations. In a letter dated 12 April 2012, the USEPA revised the classification of the equipped cabins on Bellows AFS as "residential" and asserted that the associated LCCs must be upgraded to comply with 40 CFR 144.81(2). Consequently, there are 29 noncompliant LCCs that are being evaluated for closure, with 26 of these being considered for replacement with improved wastewater treatment systems that comply with both Department of Defense policies and federal and state regulations governing domestic wastewater treatment systems (three cabins were previously demolished).

The Environmental Assessment (EA), as incorporated by reference into this finding and attached hereto, analyzed the potential environmental consequences of activities associated with closing the existing LCCs and implementing new wastewater management and treatment measures.

ALTERNATIVES CONSIDERED

The USAF originally considered eight alternatives to the proposed action. However, per 32 CFR 989.8, the USAF developed written selection standards to narrow the range of alternatives analyzed in the EA. Three action alternatives and a No Action Alternative were fully analyzed in the EA. A detailed discussion of the selection standards and the alternatives can be found in Section 2.0 of the EA.

PREFERRED ALTERNATIVE

Under the Preferred Alternative, 29 LCCs would be cleaned and 26 onsite aerobic treatment units (ATU) would be installed to treat wastewater from the 26 existing recreational cabins. Treated effluent from the onsite systems would be dispersed at each cabin location using subsurface drip disposal and the area over the subsurface drip line will be re-vegetated using seedlings of native Hawaiian vegetation. In addition to the subsurface drip irrigation, cleaned LCCs would be converted to seepage pits to serve as backup and emergency effluent disposal. LCCs that are not needed for use as seepage pits would be abandoned following relevant protocols. A detailed discussion of the Preferred Alternative can be found in Section 2.5.1 of the EA.

Archaeological monitoring will be conducted during all construction activities and any discoveries will be managed in accordance with applicable provisions of 43 CFR Part 10. An archaeological monitoring plan will be prepared and concurred with by SHPD prior to commencing construction activities. If significant cultural remains are encountered during the project, consultation with the SHPD and Native Hawaiian Organizations will be conducted to mitigate the potential adverse effects.

SUMMARY OF FINDINGS

The resources analyzed in detail in this EA are cultural resources, visual resources, recreational opportunities, water resources, biological resources, utilities and infrastructure, soils, air quality, greenhouse gas emissions, hazardous materials, solid waste, health and safety, noise and coastal zones. The

Air Force has concluded that no significant adverse effects would result to these resources as a result of the Proposed Action. Further, no significant cumulative impacts would result from the Proposed Action when combined with other past, present, or reasonably foreseeable future projects on Bellows AFS. A detailed description of the potential environmental effects and recommended environmental protection measures is provided in Table 4-1 of the EA.

FINDING OF NO SIGNIFICANT IMPACT


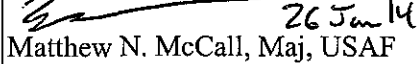

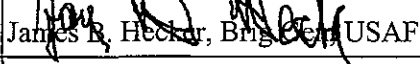
Based on my review of the facts and analyses contained in the attached EA, conducted under the provisions of NEPA, CEQ Regulations, and 32 CFR 989, I find that the implementation of the Preferred Alternative, cumulatively with other projects at Bellows AFS, will not result in a significant effect on human health, cultural resources or the natural environment. Accordingly, an Environmental Impact Statement is not required. The signing of this Finding of No Significant Impact completes the environmental impact analysis process.



JAMES B. HECKER
Brigadier General, USAF
Commander, 18th Wing

Date: 30 JUN 2014

STAFF SUMMARY SHEET

	TO	ACTION	SIGNATURE (Surname), GRADE AND DATE		TO	ACTION	SIGNATURE (Surname), GRADE AND DATE
1	18 CEG/CC	Coord	 25 Jun 14 Gary J. Schneider, Col, USAF	7			
2	18 WG/JA	Coord	 26 Jun 14 Matthew N. McCall, Maj, USAF	8			
3	18 WG/PA	Coord	 26 Jun 14 Timothy D. Flack, GS-11, USAF	9			
4	18 WG/CC	Approve	 26 Jun 14 James R. Hecker, Brig Gen, USAF	10			
5	718 CES/CEIE	Process	Emily E. Moghaddas, GS-11	11			
6				12			

SURNAME OF ACTION OFFICER AND GRADE	SYMBOL	PHONE	SUSPENSE DATE
Moghaddas, GS-11	718 CES/CEIE	634-5350	20140630
SUBJECT			DATE
Final Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for Closure of Cesspools and Implementation of Wastewater Management and Treatment Measures, Bellows Air Force Station (AFS), Hawaii			20140625

SUMMARY

1. PURPOSE: Obtain 18 WG/CC approval of the subject EA and FONSI by signing the FONSI at Tab 1.

2. BACKGROUND: In 2012, United States Environmental Protection Agency (EPA) issued a letter stating that 27 Large Capacity Cesspools (LCCs) at Bellows AFS were out of federal compliance and must be closed as soon as possible. The EA and FONSI have been prepared to evaluate impacts of closing the LCCs and implementing wastewater management and treatment measures. Two goals drive the need to finalize this EA and sign the FONSI on 30 June 2014:

a. Address EPA's concerns in a timely manner; avoid a notice of violation for continued operation of 26 non-compliant LCCs.

b. Use government funding in a responsible manner. If the FONSI is not signed by 30 June 2014, the Air Force risks losing the \$4.3M in FY14 funds to implement the selected alternative and further delay compliance with the Clean Water Act. Under an expedited schedule, 772 CONS can award a contract by 30 September 2014 if the FONSI is signed by 30 June 2014.


The consultation period for coastal zone effects under the Coastal Zone Management Act (CZMA) ends 29 June 2014. On that date, the EA and FONSI may be considered truly "final," and ready for review and signature by the approving official.

No substantive comments were received during the 30-day public comment period for the Draft EA and Draft FONSI. Editorial changes between the Draft and Final versions are itemized at Tab 2. The Final EA is included at Tab 3.

3. DISCUSSION: Per 32 CFR 989.15(f), the FONSI signature authority has been delegated to 18 WG/CC (Tab 4).

4. VIEWS OF OTHER: The Draft EA and Draft FONSI have been reviewed by 18 CEG, 18 FSS, 18 MSG, 18 WG/JA, and 18 WG/PA, with Staff Summary Sheet documentation at Tab 5. Draft documents were also reviewed by AFCEC/CZN, AFCEC/CFPE, PACAF A7, AFLOA/JACE, BELLOWES AFS, NAVFAC HI, and 718 CES/CEI.

5. RECOMMENDATION: 18 WG/CC sign the FONSI at Tab 1 on 30 June 2014.


MARK O. PINNAU, GS-13
Deputy, 718th Civil Engineer Squadron

5 Tabs:

1. FONSI, Cesspool Closure BAFS
2. Final Edits, Cesspool Closure BAFS
3. Final EA, Cesspool Closure BAFS
4. 32 CFR 989.15 (f)
5. eSSS Draft EA, Cesspool Closure BAFS

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Closure of Cesspools and
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Prepared For:

Bellows Air Force Station

20 June 2014

Cover Sheet

Final Environmental Assessment

Closure of Cesspools and Implementation of Wastewater Management and Treatment Measures at Bellows Air Force Station, Hawai'i

Responsible Agencies: The United States Air Force (USAF)

Proposed Action: Closure of the existing 29 Large Capacity Cesspools (LCC) on Bellows Air Force Station (AFS) in accordance with applicable regulatory requirements and provision of alternative wastewater treatment and disposal facilities for the cabins formerly served by the LCCs.

For more information, please contact:

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Abstract: The USAF has prepared this Environmental Assessment (EA) to assess the potential environmental effects that may result from closing 29 existing cesspools and installing 26 regulatory compliant wastewater treatment systems at existing cabins. Three action alternatives and a No Action Alternative were considered in this EA. The action alternatives include the following: (1) installation of onsite aerobic treatment units (ATU), dispose of treated effluent using subsurface drip lines and plant native Hawaiian vegetation above the driplines (2) installation of ATUs and convert the LCCs to seepage pits for disposal of treated effluent, and (3) install ATUs and store treated effluent in wastewater holding tanks for approved re-use options.

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- E NHPA Section 106 Consultation Packet
- F ESA Section 7 Consultation Packet
- G Community Outreach Meeting Transcripts

ACRONYMS AND ABBREVIATIONS

ACHP	Advisory Council on Historic Preservation
ADA	Americans with Disabilities Act
AFI	Air Force Instruction
AFS	Air Force Station
APE	Area of Potential Effect
ARPA	Archaeological Resources Protection Act
ATU	aerobic treatment unit
bgs	below ground surface
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CO	carbon monoxide
CWA	Clean Water Act
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
dBA	A-weighted decibel
DoD	U.S. Department of Defense
E.O.	executive order
EA	Environmental Assessment
EIAP	Environmental Impact Analysis Process
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FONPA	Finding of No Practicable Alternative
FONSI	Finding of No Significant Impact
GHG	greenhouse gas
HAR	Hawai'i Administrative Rules
HDOH	State of Hawai'i Department of Health
HRS	Hawai'i Revised Statutes
IICEP	Interagency and Intergovernmental Coordination for Environmental Planning
INRMP	Integrated Natural Resource Management Plan
LCC	large capacity cesspool
MBTA	Migratory Bird Treaty Act

N/A	not applicable
NAAQS	National Ambient Air Quality Standards
NAGPRA	Native American Graves Protection and Repatriation Act
NAVFAC	Naval Facilities Engineering Command
NEPA	National Environmental Policy Act of 1969
NHO	Native Hawaiian Organizations
NHPA	National Historic Preservation Act
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
O ₃	ozone
OSHA	Occupational Safety and Health Administration
Pb	lead
PM _{2.5}	particulate matter equal to or less than 2.5 microns in diameter
PM ₁₀	particulate matter equal to or less than 10 microns in diameter
RCRA	Resource Conservation Recovery Act
SHPD	State Historic Preservation Division
SO ₂	sulfur dioxide
TMDL	total maximum daily load
UIC	underground injection control
U.S.C.	United States Code
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
WWTP	Wastewater Treatment Plant
yd ³	cubic yard

Purpose and Need for Action

This section describes the purpose of and need for the Proposed Action, summarizes the scope of the Environmental Assessment (EA), and explains applicable regulatory requirements.

This EA is prepared in accordance with U.S. Air Force (USAF) obligations under the National Environmental Policy Act of 1969 (NEPA) (42 United States Code [U.S.C.] §4321 *et seq.*), the Council on Environmental Quality's (CEQ's) NEPA-implementing regulations (Title 40 of the Code of Federal Regulations [CFR] Part 1500-1508), USAF NEPA-implementing regulations (32 CFR 989), and U.S. Department of Defense (DoD) Instruction 4715.9 (Environmental Planning and Analysis).

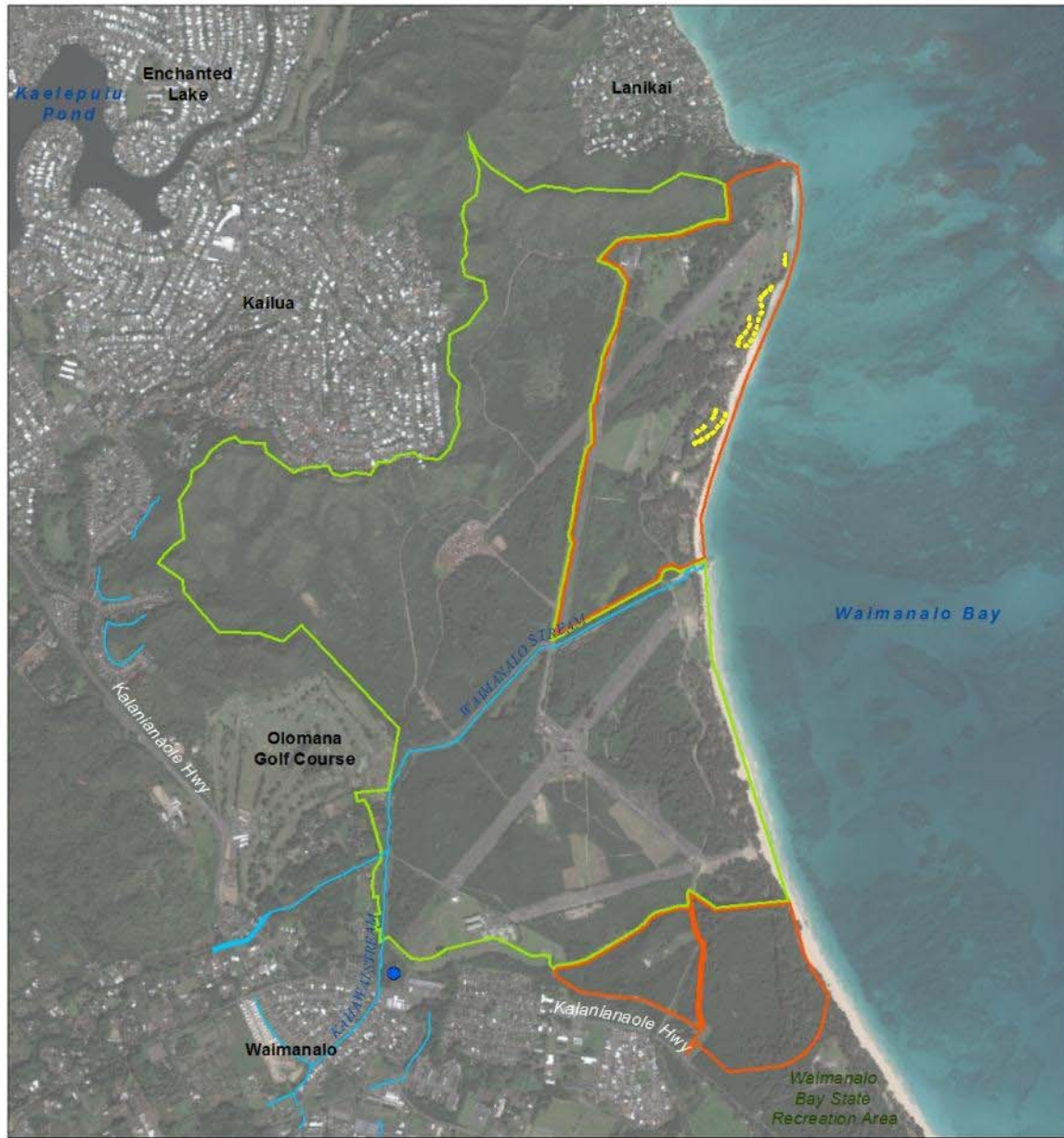
1.1 Introduction

Bellows Air Force Station (AFS) includes approximately 423 acres on the southeastern (windward) side of O'ahu, Hawai'i (see Figure 1-1) and is located between the towns of Waimānalo and Kailua. Bellows AFS is managed as a Geographically Separated Unit of Kadena Air Base, Japan. Detachment 2, 18th Force Support Squadron, 18th Wing located at Bellows AFS, operates and maintains Bellows AFS as a recreational and training area for military personnel.

The primary mission of Bellows AFS is to enhance U.S. military combat effectiveness by delivering secure, affordable, and customer-focused recreational services. Approximately 500,000 DoD personnel, retirees, and their guests visit Bellows AFS per year. Facilities at Bellows AFS that support the recreational mission include beach access, playgrounds, a golf driving range, rustic cabins, group camp areas, and equipped cabins. There are a total of 117 equipped cabin facilities available for rent on Bellows AFS. The equipped cabins generally consist of two bedrooms, a living area, a kitchen, and restroom facilities. The annual occupational rate for these cabins is greater than 90 percent. The equipped cabins are a central component of the recreational mission on Bellows AFS and are the focus of this EA.

1.2 Purpose and Need

The purpose of the proposed action is to support the recreational services mission at Bellows AFS by providing equipped cabins in a manner consistent with environmental regulatory requirements. Twenty-six of the existing equipped cabins on Bellows AFS use large capacity cesspools (LCC) for wastewater treatment. The U.S. Environmental Protection Agency (USEPA) banned residential LCCs in 2005 and required that existing residential LCCs be closed in accordance with local regulations. In a letter dated 12 April 2012, the USEPA asserted the classification of the equipped cabins on Bellows AFS were "residential," though originally they had been misclassified as "non-residential." The USEPA requested Bellows AFS submit a proposal and schedule to close the LCCs in accordance with 40 CFR 144.88 (USEPA, 2012a). There are currently 28 LCCs on Bellows AFS associated with 26 equipped cabins (three of the original 29 equipped cabins have since been demolished). In addition to the 28 LCCs, there is an underground injection control (UIC) tied to demolished cabin number 452. Though this UIC is permitted in accordance with Hawai'i Administrative Rules (HAR), Title 11, Chapter 23, it operates similarly to a LCC, and will be treated as a LCC for purposes of this EA. Consequently, 29 existing LCCs need to be closed and the wastewater treatment systems for 26 cabins need to be upgraded. See Figure 1-2 and Figure 1-3 for the location of the facilities requiring closure and upgrading/replacement. Appendix A outlines the cabins served by the LCCs.



- Sewer Pump Station
- ▭ Cabins Served by LCCs
- ▭ Bellows AFS
- ▭ Marine Corps Training Area Bellows
- Stream

0 1,000 2,000 Feet



**Figure 1-1
Bellows AFS and
Surrounding Area**

Bellows Air Force Station, Oahu, Hawaii

R:\AFCEC_BELLOWS\MAPFILES\IES_REPORT\FIGURE-1-1_SITE_OVERVIEW.MXD ACROSS 3/19/2014 1:20:40 PM



- Cesspool to be Converted or Closed
- ▭ Cabins Currently Served by LCCs
- ▭ Demolished Cabins Served by LCCs
- ▭ Potential Locations for On-Site Systems
- ▭ Road Area

0 100 200 Feet



Figure 1-2
Aerial View of North Cabins
Bellows Air Force Station, Oahu, Hawaii

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- Cesspool to be Converted or Closed
- ▭ Cabins Currently Served by LCCs
- ▭ Potential Locations for On-Site Systems
- ▭ Road Area

0 50 100 Feet



Figure 1-3
Aerial View of South Cabins
Bellows Air Force Station, Oahu, Hawaii

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1.3 Summary of Key Environmental Compliance Requirements

1.3.1 National Environmental Policy Act

This document is prepared in accordance with NEPA, as amended (42 U.S.C. Sections [§§] 4321-4374), the CEQ regulations for implementing the procedural provisions of NEPA (40 CFR 1500-1508), and USAF Environmental Impact Assessment Process regulations (32 CFR 989).

1.3.2 Integration of Other Environmental Statutes and Regulations

The other statutes, regulations, and orders, which are most pertinent to the proposed action are summarized in Table 1-1.

TABLE 1-1
Other Environmental Analysis and Consultation Requirements

Permit or Approval	Description	Statute/Regulation/Order(s)	Administrative Authority
National Historic Preservation Act (NHPA) Section 106 Consultations and the Native America Grave Protection and Repatriation Act (NAGPRA) Coordination	Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties and afford the Advisory Council on Historic Preservation (ACHP) a reasonable opportunity to comment on such undertakings (36 CFR 800.1(a))	NHPA (16 U.S.C. § 470); 36 CFR Part 800; NAGPRA (25 U.S.C. §§ 3001)	Hawai'i Department of Land and Natural Resources (DLNR) State Historic Preservation Division (SHPD) and Native Hawaiian Organizations (NHO)
Coastal Zone Management Act (CZMA) Federal Consistency Determination	All federally proposed or permitted actions within the State of Hawai'i must be evaluated for consistency with the Hawai'i CZMA Program	CZMA (16 U.S.C. §§ 1451 et seq.); 15 CFR 930; Hawai'i Revised Statutes (HRS) 205A	State of Hawai'i, Office of Planning
Endangered Species Act (ESA) Section 7 Consultations and Migratory Bird Treaty Act (MBTA) Consultation/Coordination	Section 7(a)(2) of the ESA requires for actions authorized, funded, or carried out by a federal agency, the agency shall, in consultation with the USFWS and/ the National Marine Fisheries Service ensure that the action is not likely to jeopardize any endangered or threatened species or result in the destruction or adverse modification of their critical habitat. Federal agencies must also avoid adverse impacts species protected by the MBTA.	ESA (16 U.S.C. § 1531); MBTA (16 U.S.C. §§ 703-712); 50 CFR 21.27	U.S. Fish and Wildlife Service (USFWS)
Clean Water Act (CWA) §402 National Pollutant Discharge Elimination System (NPDES) Permit(s)	A NPDES Construction General Permits is required to authorize storm water discharges associated with construction activities greater than 1 acre.	§ 402 of CWA (33 U.S.C. 1251 §§ et seq.); HRS 342D; HAR 11-55	State of Hawai'i Department of Health (HDOH) Clean Water Branch

1.3.3 Interagency and Intergovernmental Coordination for Environmental Planning

Interagency and Intergovernmental Coordination for Environmental Planning (IICEP) is a USAF process to inform and coordinate with other governmental agencies regarding proposed actions. When the action is analyzed in an EA, the IICEP also provides for scoping and aids to refine alternatives that will be considered as well as to identify potential adverse environmental effects and resources that may be adversely affected.

Through the IICEP process, the USAF solicits comments regarding their proposed action(s) from other federal, state, and local agencies that have jurisdiction by law or special expertise with respect to a pertinent

environmental issue, as well as from other entities such as NHOs. A copy of the IICEP letters and attachment(s) sent on 10 August 2013, together with the list of the agencies/ individuals contacted and responses received, is provided in Appendix B.

1.3.4 Required Consultations

Table 1-2 provides a list of agencies or entities for which coordination or consultations have already been conducted, or will be initiated. It should be noted that the Hawai'i SHPD did not respond to the Section 106 consultation package within the 30-day review period. Therefore, the Air Force will proceed with the undertaking in accordance with 36 CFR, Chapter VIII, Section 800.5(c)(1), which states that the agency may proceed after the close of the 30 day review period if the SHPO has agreed or not provided a response and no consulting party has objected. Specifically, this section states that "The agency official shall then carry out the undertaking in accordance with paragraph (d)(1) of this section."

TABLE 1-2

Agencies or Entities for which Coordination or Consultation Conducted

Consultation Process	Agencies/ Entities Consulted	Agreement Responsibilities	Location of Consultation Documents
NHPA Section 106, NAGPRA	Hawai'i SHPD, NHOs	Bellows AFS Commander	Appendix E
ESA Section 7	USFWS	Bellows AFS Commander	Appendix F
CZMA	Hawai'i Coastal Zone Management (CZM) Program	Bellows AFS Commander	Appendix D

1.4 Public Outreach and Involvement

Two community outreach meetings were held regarding this EA to keep the community members and stakeholders involved throughout the NEPA process. The first meeting was held at the Waimānalo Elementary and Intermediate School on 29 August 2013 to announce the purpose and the need, and preliminary alternative selections to the public. A second meeting was held at the same location on 15 May 2014 in conjunction with the Draft EA release and public comment period. Announcement notices for the meetings were published in the Honolulu Star Advertiser Newspaper. Announcements were also made at monthly Waimānalo Neighborhood Meetings. Prominent members of the community were also notified in advance of each public meeting. Transcripts from both community meetings are presented in Appendix G.

Copies of the draft EA were also given to members of the Waimānalo Neighborhood Board for their review. A copy of the draft EA was also made available at the Waimānalo Library during the 30 day review period. No public comments regarding the validity of the EA or preferred alternative were received during the 30-day public comment period.

1.5 EA Outline

The following is a brief outline of the EA sections:

- **Section 1.0 Purpose and Need for Action** - provides background information about the Proposed Action, the purpose and need for the Proposed Action, applicable regulatory requirements, and a brief description of how the document is organized.
- **Section 2.0 Description of the Proposed Action and Alternatives** - presents the considered alternatives, screening criteria, and detailed descriptions of the No Action Alternative and action alternatives. It also includes a discussion of resources eliminated from further analysis.

- **Section 3.0 Affected Environment** - provides a description of the existing conditions of the environmental resources potentially affected by the No Action Alternative and action alternatives.
- **Section 4.0 Environmental Consequences** - presents an analysis of potential direct, indirect, and cumulative impacts to environmental resources resulting from the No Action Alternative and action alternatives. A summary table of comparing the potential impacts of each alternative is provided in Table 4-1.
- **Section 5.0 List of Preparers** – provides a list of individuals who contributed to the preparation of this EA.
- **Section 6.0 References** – presents the references used in preparing this EA.

Description of the Proposed Action and Alternatives

The selection standards for determining which alternatives (other than the No Action Alternative) are carried forward for full analysis are presented in this section.

2.1 Description of the Proposed Action

The proposed action is closure of the LCCs in accordance with applicable regulatory requirements and standards, and provision of alternative wastewater treatment and disposal facilities for the cabins formerly served by the LCCs. The Proposed Action is in line with the Bellows AFS Integrated Natural Resource Management Plan (INRMP) goal to protect and improve water quality in streams, canals and coastal waters on and near Bellows AFS (Bellows AFS, 2013).

2.1.1 Clean Closure of LCCs

LCC Closure would be conducted in accordance with HDOH LCC abandonment procedures (HDOH, 2004). These procedures involve pumping all sediment and sludge until the native material at the bottom of the LCC is exposed. During pumping activities, the LCC would be cleaned with high pressure water until native material is exposed. Sediments, sludge, and all wastewater from the cleaning operation would be collected in a vacuum truck and disposed of in accordance with federal, state, and local regulations.

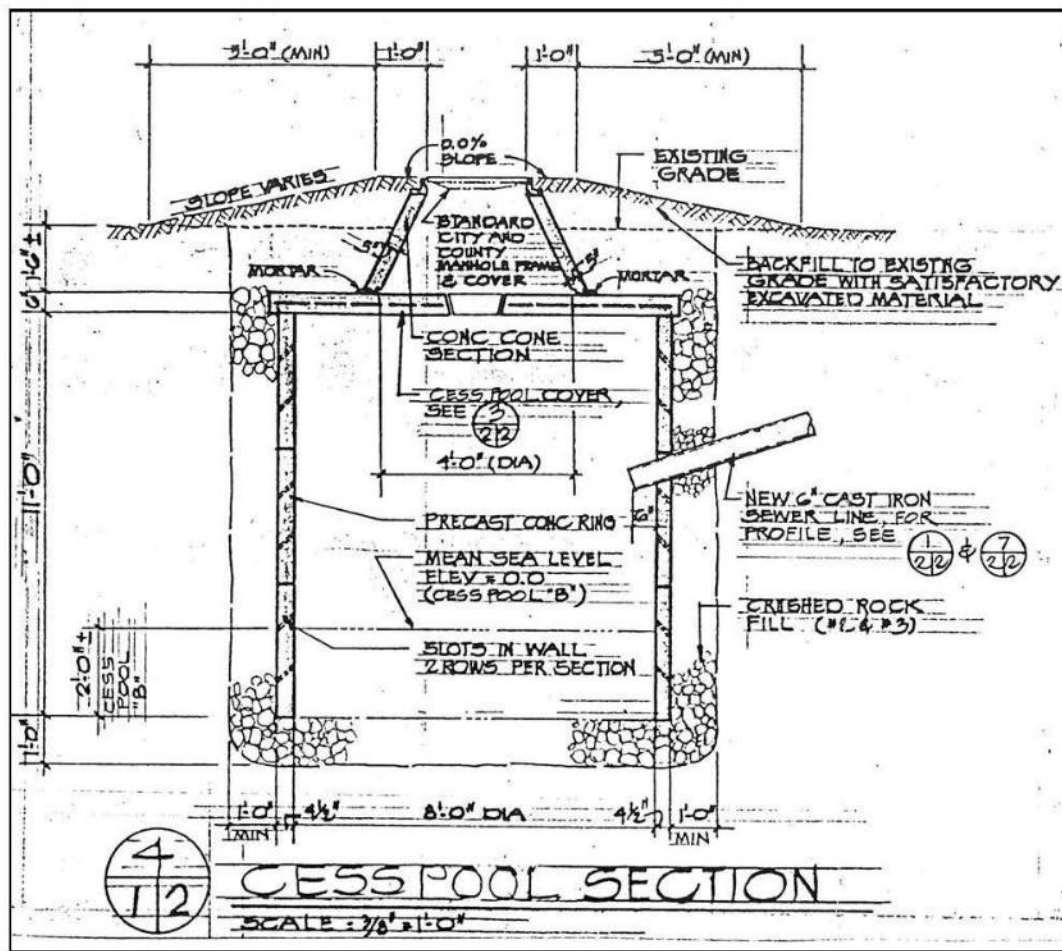
The LCCs would then be backfilled or converted into seepage pits. When backfilled, clean native fill would be compacted to 3.5 feet from the surface of the LCC lid. Each LCC inlet pipe would be sealed with grout. The LCCs would be backfilled with concrete to the top of the LCC lid. The LCC lid would then be covered with native topsoil and reseeded to match the surrounding conditions.

The LCCs may also be converted into seepage pits, after cleaning. Seepage pits are dry wells which allow treated effluent to drain gradually into the ground and would only be used as a secondary treatment option. After primary treatment, the effluent would be disinfected by calcium hypochlorite tablets before injection into the seepage pit. The disturbed area around the seepage pit cover would be covered with native topsoil and reseeded to match the surrounding conditions.

The expected ground disturbance for LCC closure or seepage pit conversion is approximately 0.11 acre for all 29 sites, or roughly 165 square feet per LCC. This estimates includes equipment staging during construction and closure of LCC. See Figure 2-1 for the typical LCC design at Bellows AFS.

2.1.2 Install New Wastewater Systems at 26 Existing Cabins

Once the LCCs are closed or converted into seepage pits, wastewater (including gray and black water/sanitary waste streams) must be handled or managed by alternative means. Wastewater treatment systems will be designed to accommodate estimated wastewater flows. Engineers will use Table 1, in the HAR chapter 11-62, Appendix F to estimate the daily wastewater flows per cabin (HDOH, 2004). Based on the HAR 11-62 table, the Bellows AFS equipped cabins would most likely fall under the definition of a motel, with an estimated 50 gallons per day per person.



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CHIEF DESIGN				CHIEF ENGINEER					
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FIGURE 2-1
Typical Large Capacity Cesspool
Bellow Air Force Station, Oahu, Hawaii

2.2 Description of the No Action Alternative

Under the No Action Alternative, the 29 LCCs serving existing and former recreational cabins would be closed following HDOH protocols to satisfy USEPA's request to close the LCCs. The cabins would remain in place but would not be occupied or used for recreational purposes, all wastewater generating equipment would be permanently shut down. Though the No Action Alternative would not meet the purpose and need for the proposed action, the No Action Alternative is analyzed as recommended by the CEQ.

2.3 Selection Standards and Screening of Alternatives

There are numerous wastewater management and/or technological options for providing wastewater treatment and disposal services to the recreational cabins currently being served by the LCCs. Per 32 CFR 989.8(c), the USAF may develop written selection standards to narrow the range of alternatives analyzed to those that meet operational, technical, or environmental standards applicable to this proposed action.

2.3.1 Range of Alternatives Considered

This section presents the list of the potential alternatives that have been considered. All alternatives consist of two components: closure of the 29 LCCs currently or formerly serving the recreational cabins, and provision of alternative methods of wastewater treatment and disposal to serve the 26 existing cabins.

Each alternative considered facilitates the provision of recreational cabin services at the current level. In addition, all of the wastewater treatment and disposal aspects of the potential alternatives will incorporate low flow management policies and fixtures within the 26 existing cabins.

The range of action alternatives initially considered includes the following:

1. Install onsite aerobic treatment units (ATU), and dispose of treated effluent using subsurface drip lines, located beneath a bed of native Hawaiian plants, with seepage pits for backup storage.
2. Install onsite ATUs and convert the LCCs to seepage pits for disposal of treated effluent.
3. Install onsite ATUs and store treated effluent in wastewater holding tanks for approved re-use options (i.e., irrigate golf course driving range, constructed wetland, and similar).
4. Install traditional septic systems with absorption fields for each cabin.
5. Install large-capacity aboveground holding tanks for wastewater collection and transport to Waimānalo Wastewater Treatment Plant (WWTP) for treatment/disposal.
6. Install an onsite WWTP to include constructed wetland treatment processes.
7. Install pumping facilities and force main to convey wastewater to the Waimānalo WWTP.

2.3.2 Selection Standards

The underlying principal for incorporating each selection standard is presented in Table 2-1. Any technological solution employed must meet the selection standards presented in Table 2-2.

TABLE 2-1
Selection Standards and Underlying Principal

Selection Standard	Underlying Principal
1) Must minimize the potential for contaminant loading into subsurface, surface, and coastal waters.	Bellows AFS is located in the Waimānalo Watershed, which was identified by the USEPA and HDOH as an impaired watershed partly because of the nutrient loading resulting from Waimānalo community cesspools. The Watershed Restoration Action Strategy for the area places a high priority on decommissioning cesspools.
2) Must minimize the amount of ground disturbance in archaeologically sensitive areas for system installation or operation and maintenance.	The USAF anticipates the potential for cultural resources to be present within the Area of Potential Effects (APE) for each of the action alternatives. Cultural resource preservation is a fundamental focus for the USAF at Bellows AFS.
3) Must result in minimal long-term degradation of recreational experience related to sound, odor, and visual impacts.	The primary mission of Bellows AFS is to enhance combat effectiveness by delivering secure, affordable, and customer-focused recreational services. To uphold this mission, it is critical to minimize the degradation of the recreation experience as it relates to sound, odor, and visual impacts.
4) Must have high reliability (low failure rate) and low maintenance requirements (in terms of onsite manpower and supplies needed).	The technology must meet or exceed the high reliability demonstrated by the current wastewater systems. Low maintenance requirements are based on the manpower and supplies needed to maintain the systems and should not be excessive when compared to current levels.
5) Must allow for tie-in of other facilities and/or future expansion.	Tying future wastewater systems into the technology selected through this EA process will create an economy of scale, decrease costs and improve treatment efficiencies.
6) Use technologies that can be implemented in a timely manner (18 months following completion of the NEPA process).	In a letter dated 12 April 2012, the USEPA requested Bellows AFS submit a proposal and schedule to close the existing LCCs in accordance with 40 CFR 144.88 (USEPA, 2012a).

2.3.3 Screening of Alternatives

For the purpose of screening the alternatives, selection standards were given a weighted score between 1 and 2 based on the importance of the standard, with 1 being less important and 2 being more important. In screening each alternative against the six selection standards, a rating of High, Medium, or Low was given. A High rating received the full weighed score for that given standard, a Medium rating received 50 percent of the weighted score, and a Low rating received 0 percent of the weighted score (see Table 2-2).

TABLE 2-2
Summary of Alternatives Screening

Alternative Description	Standard 1: Must minimize the potential for contaminant loading into subsurface, surface and coastal waters. (2)	Standard 2: Must minimize the amount of ground disturbance in archaeologically sensitive areas. (2)	Standard 3: Must result in minimal long-term degradation of recreational experience. (1.5)	Standard 4: Must have high reliability and low maintenance requirements (1.5)	Standard 5: Must allow for tie-in of other facilities and/or expansion. (1.5)	Standard 6: Use technologies that can be implemented in a timely manner. (1)
Alternative 1: Install ATUs, and dispose of treated effluent using subsurface drip lines and seepage pits as backup. Score=7.25	High (2)	High (2)	High (1.5)	Medium (.75)	Low (0)	High (1)
Alternative 2: Install ATUs, and convert the LLCs to seepage pits for disposal of treated effluent. Score=6.25	Medium (1)	High (2)	High (1.5)	Medium (.75)	Low (0)	High (1)
Alternative 3: Install ATUs, and store treated effluent in grey water holding tanks for approved re-use options. Score=6.25	High (2)	Medium (1)	Medium (.75)	Medium (.75)	Medium (.75)	High (1)
Alternative 4: Install traditional septic systems with absorption fields for each cabin. Score=5.25	Low (0)	High (2)	High (1.5)	Medium (.75)	Low (0)	High (1)
Alternative 5: Install holding tanks for wastewater collection; transport to WWTP for treatment/disposal. Score=5.25	Medium (1)	Medium (1)	Low (0)	Medium (.75)	High (1.5)	High (1)

TABLE 2-2

Summary of Alternatives Screening

Alternative Description	Standard 1: Must minimize the potential for contaminant loading into subsurface, surface and coastal waters. (2)	Standard 2: Must minimize the amount of ground disturbance in archaeologically sensitive areas. (2)	Standard 3: Must result in minimal long-term degradation of recreational experience. (1.5)	Standard 4: Must have high reliability and low maintenance requirements (1.5)	Standard 5: Must allow for tie-in of other facilities and/or expansion. (1.5)	Standard 6: Use technologies that can be implemented in a timely manner. (1)
Alternative 6: Install an onsite wastewater treatment plant to include constructed wetland treatment processes. Score=4.25	High (2)	Low (0)	Medium (.75)	Low (0)	High (1.5)	Low (0)
Alternative 7: Connect to the Municipal WWTP Score=5.75	High (2)	Low (0)	High (1.5)	Medium (.75)	High (1.5)	Low (0)

2.4 Alternatives Considered but Eliminated from Detailed Study

Under NEPA, an EA requires considerations and analysis of reasonable alternatives to the Proposed Action. Considering alternatives helps to avoid unnecessary impacts and allows for an analysis of reasonable ways to achieve the stated purpose. To warrant detailed evaluation, an alternative must be reasonable. To be considered reasonable, an alternative must be suitable for decision making (that is, any necessary preceding events have taken place), capable of implementation, and satisfactory with respect to meeting the purpose and need for the action. The following alternatives were considered but eliminated from detailed analysis based on the results of the screening matrix presented in Table 2-3.

2.4.1 Alternative 4

This alternative involved replacing the existing LCCs at Bellows AFS with traditional septic systems and absorption fields at each cabin location. As a result of the screening analysis, this alternative was eliminated from further consideration. The following summary explains the rationale for the Low and Medium scoring standards under this alternative.

- **Standard 1: Must minimize the potential for contaminant loading into subsurface, surface, and coastal waters.** The quality of effluent water derived from septic and absorption bed treatment is of relatively poor quality with high levels of excess contaminants/nutrients, and therefore this alternative scored Low for this standard.
- **Standard 4: Must have high reliability and low maintenance requirements (manpower and supplies).** According to the USEPA, up to 20 percent of all septic systems installed in the United States malfunction each year, causing pollution to the environment and creating a risk to public health. Therefore, this alternative scored Medium for this standard.
- **Standard 5: Must allow for tie-in of other facilities and/or expansion.** Septic tank /absorption field technology does generally not allow for tie-in of other facilities; therefore, this alternative scored Low for this standard.

2.4.2 Alternative 5

This alternative involved replacing the existing LCCs at Bellows AFS with aboveground holding tanks for wastewater collection and offsite transport to Waimānalo WWTP for final treatment and disposal. As a result of the screening analysis, this alternative was eliminated from further consideration. The following summary explains the rationale for the Low and Medium scoring standards under this alternative:

- **Standard 1: Must minimize the potential for contaminant loading into subsurface, surface and coastal waters.** There is a potential for sewage spills during frequent pumping/transportation activities, this standard was rated as Medium.
- **Standard 2: Must minimize the amount of ground disturbance in archaeologically sensitive areas for system installation or operation and maintenance.** The holding tanks would need to be located within an area of particularly high probability for archaeological resources; therefore, this alternative scored Medium for this standard.
- **Standard 3: Result in no degradation of recreational experience related to sound, odor and visual impacts.** It is anticipated that significant degradation of the recreational experience related to sound, odor, and visual impacts would result from the onsite storage, frequent pumping, and transportation of wastewater from Bellows AFS to the Waimānalo WWTP. Heavy pump trucks would be required to travel adjacent to cabins and generate substantial noise and cause degradation of roadways over time. As a result, this alternative scored Low for this standard.
- **Standard 4: Must have high reliability and low maintenance requirements (manpower and supplies).** It is anticipated that a moderate increase in manpower and supplies would be required

for the frequent pumping, transportation, and disposal activities involved with this alternative. Therefore, this alternative scored Medium for this standard.

2.4.3 Alternative 6

Alternative 6 involved replacing the existing LCCs at Bellows AFS with an onsite WWTP to include constructed wetland processes. As a result of the screening analysis, this alternative was eliminated from further consideration. The following summary explains the rationale for the Low and Medium scoring standards under this alternative:

- **Standard 2: Must minimize the amount of ground disturbance in archaeologically sensitive areas for system installation or operation and maintenance.** The extent of ground disturbance required to connect all 26 cabins into a main sewer line and the footprint required to construct a wastewater treatment facility has potential to significantly disturb cultural resources, and therefore this alternative scored Low for this standard.
- **Standard 3: Result in no degradation of recreational experience related to sound, odor and visual impacts.** It is anticipated that significant degradation of the recreational experience related to sound, odor, and visual impacts would result from an onsite wastewater treatment plant. During days with no/light trade winds (approximately 40 percent of the year), odor emitting from an onsite wastewater treatment plant is likely to degrade the recreational experience at Bellows AFS. Therefore, this alternative scored Medium for this standard.
- **Standard 4: Must have high reliability and low maintenance requirements (manpower and supplies).** It is anticipated that operation and maintenance of an onsite wastewater treatment plant at Bellows AFS would result in a significant increase in manpower (plant operators) and materials required to maintain system operations. Therefore, this alternative scored Low for this standard.
- **Standard 6: Use only treatment technology which can be completed in a timely manner.** The 29 existing LCCs must be closed and replaced to comply with federal regulations. Because the anticipated lengthy timeframe to design, construct, and bring online an onsite wastewater treatment plant at Bellows AFS is anticipated to be relatively considerable, this alternative scored Low for this standard.

2.4.4 Alternative 7

Alternative 7 was considered to replace the existing LCCs at Bellows AFS by conveying wastewater to the Waimānalo WWTP. As a result of the screening analysis, this alternative was eliminated from further consideration. The following summary explains the rationale for the Low and Medium scoring standards under this alternative:

- **Standard 2: Must minimize the amount of ground disturbance in archaeologically sensitive areas for system installation or operation and maintenance.** An archaeological inventory survey of the pipeline anticipated area of potential effect has not been conducted. The extent of ground disturbance required to connect all 26 cabins into a main sewer line, install pumping facilities, and excavate/install approximately 3 miles of pipeline is likely to disturb cultural resources. Therefore, this alternative scored Low for this standard.
- **Standard 4: Must have high reliability and low maintenance requirements (manpower and supplies).** It is anticipated that operation and maintenance of a wastewater pipeline system at Bellows AFS would result in increased manpower and materials required to maintain system operations. Therefore, this alternative scored Medium for this standard.
- **Standard 6: Use only treatment technology which can be completed in a timely manner.** Because the anticipated lengthy timeframe to fund, design, construct, and bring online a municipal wastewater pipeline at Bellows AFS is anticipated to be relatively considerable, this alternative scored Low for this standard.

2.5 Description of Alternatives Carried Forward for Analysis

2.5.1 Alternative 1 (Preferred Alternative)

Alternative 1 is the preferred alternative. For Alternative 1, up to 26 onsite ATUs would be installed to treat wastewater from the 26 existing recreational cabins. These systems offer a higher quality of effluent than traditional septic tanks. A generic schematic of a typical ATU is shown in Figure 2-2. The ATUs would be located adjacent to each cabin and near the existing LCC (that is, within the circled areas in Figures 1-2 and 1-3). Whenever possible, ATUs would be placed between cabins. The ATU would receive raw sewage from each cabin duplex through a newly installed inlet pipe that would be set an approximate depth of three feet below ground surface (bgs). The capacity/size requirement for each ATU is based on predetermined design criteria provide in HAR 11-62, Appendix A, Table 1. In accordance with Hawai'i DOH Wastewater Branch guidance, the establishment type for the 26 existing cabins at Bellows AFS is considered "Motels with bath, toilet, and kitchen waste (per bed space)," which is set at 50 gallons per person, per day. Each of the 26 duplex cabins can hold a maximum of 12 persons per day. Based on these numbers (12 x 50), each ATU must treat 600 gallons of wastewater per day. The approximate maximum depth for a 600 gallon per day ATU excavation would be 8 feet bgs. ATUs would be maintained by Bellows AFS personnel as per manufacturer specifications.

An electric-powered blower would provide aeration for the aerobic system in the ATUs. The installed ATUs will be connected to a power source and control panel to allow for operation of blowers. The form of electric power will be determined during the design phase of the project; however, engineers will follow the USAF sustainability implementation plan (USAF, 2012). Both the blower and control panel would be installed above ground. To the greatest extent possible, the air blower and control panels will be situated within existing electrical vaults and mechanical/ equipment sheds at each cabin location.

Treated effluent would flow from the ATU directly into a primary UV disinfection mechanism. The purpose of the UV treatment is to eliminate fecal coliforms and pathogens from the treated effluent. The UV treatment mechanism would be contained within a vault which would allow for surface access. The approximate maximum depth of the UV disinfection vault excavation would be 3 feet bgs. A secondary backup disinfection system using chlorine tablets would be installed.

The treated and disinfected effluent will flow through the UV disinfection mechanism and into the pump tank. A high water float valve will trigger a water pump within the tank to release a prescribed quantity of water out the subsurface drip field. The approximate maximum depth of the pump tank excavation would be 8 feet bgs.

Treated effluent from the ATUs would be dispersed at each cabin location using subsurface drip disposal. Subsurface drip lines allow for additional treatment of effluent through the evapotranspiration process and biological soil processes. Evapotranspiration disposes of wastewater into the atmosphere through evaporation from the soil surface and/ or transpiration by plants. The size of the subsurface drip disposal area will be based on site-specific percolation rainfall and evaporation rates and on estimated wastewater flows at each cabin. These calculations would be performed prior to system design; however it is estimated, each drip-irrigation bed would be approximately 375 square feet. For the purpose of this EA, we estimated a larger drip irrigation area then would be likely as this represents the greatest potential project impacts. Whenever possible subsurface drip lines would be located between cabins and away from roads and the beach. To minimize ground disturbance, the drip irrigation systems would be raised above the existing ground surface by approximately six (6) inches, utilizing the excavated fill from the advanced onsite system excavations to the greatest extent possible. Disturbance to the existing ground surface will be limited to tilling of the surface vegetation and topsoil to a maximum depth of 6 inches bgs.

In addition to the subsurface drip irrigation, existing LCCs would be converted to seepage pits to serve as backup and emergency effluent disposal. The seepage pits would be used during maintenance of drip lines and to serve as emergency backup during power outages. LCCs that are not needed for use as seepage pits

under Alternative 1 would be abandoned. The LCC seepage pit conversion and abandonment would follow the LCC Clean Closure procedures described in Section 2.1.1.

Once construction is complete, the area would be backfilled with native soil and revegetated. The area over the subsurface drip line will be revegetated using seedlings of native Hawaiian vegetation; potential species to be used are shown in Appendix C. Species will be selected based on their compatibility with the drip system; for instance, selected plants would need shallow root systems to avoid entanglement with the drip lines. All other disturbed areas would be reseeded using a native seed mix.

Alternative 1 would require up to 800 cubic yards (yd³) of excavation and would impact a combined 0.57 acre of land. There are roads and parking areas in close proximity of all the project sites. Construction vehicles will remain on paved surfaces to the greatest extent possible; consequently, the staging area for this activity would be minimal. Construction activities would be expected to take 6 months overall, or around 7 days per cabin. The affected cabin would be closed during the 7-day construction period; however, all other cabins surrounding the LCCs would remain available for guests during construction. A detailed description of the estimated project impacts is provided in Table 2-3.

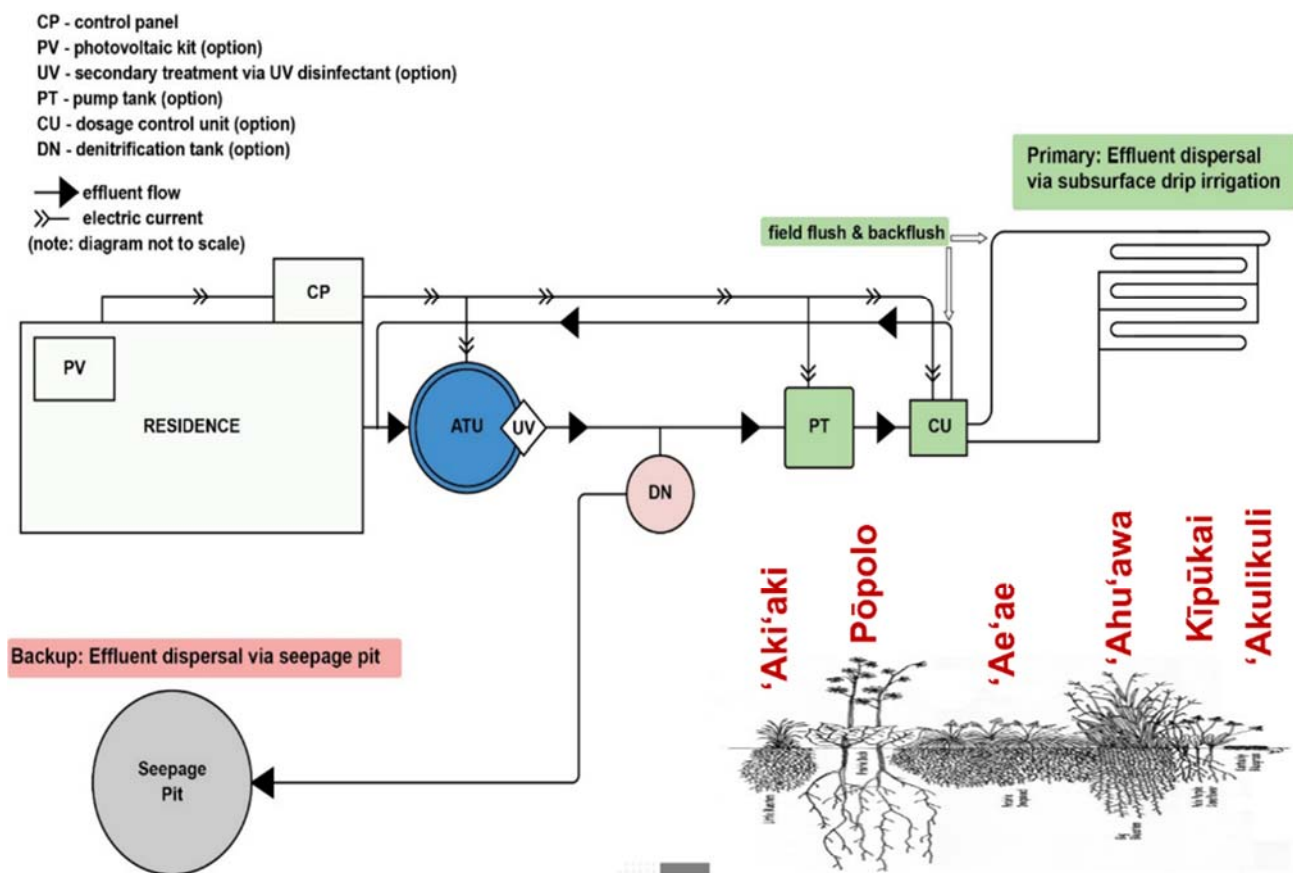


FIGURE 2-2
Notional Schematic for ATUs
Bellows Air Force Station, O'ahu Hawaii

2.5.2 Alternative 2

Alternative 2 is similar to Alternative 1; however, under Alternative 2 the subsurface drip lines would not be installed and ATU effluent would be disposed of only via seepage pit. Up to 26 ATUs would be installed in the vicinity of the cabins and the existing LCCs would be converted to seepage pits. LCCs that are not needed for use as seepage pits under Alternative 2 would be abandoned. The LCC seepage pit conversion and abandonment would follow the LCC Clean Closure procedures described in Section 2.1.1.

Once the new systems are installed, the area would be backfilled and revegetated using a native seed mix. Alternative 2 would require approximately 625 yd³ of excavation and would impact a combined 0.35 acres of land. There are roads and parking areas in close proximity of all the project sites. Construction vehicles will remain on paved surfaces to the greatest extent possible; consequently, the staging area for this activity would be minimal. A detailed description of the estimated project impacts is provided in Table 2-3.

Construction activities would be expected to take 4 months overall, or around 5 days per cabin. The cabin connected to the LCC would be closed during the 4-day construction period. However, all other cabins surrounding the LCCs would remain available for guests during construction.

2.5.3 Alternative 3

Under Alternative 3, HDOH LCC closure protocols as described in Section 2.1.1 would be conducted on all 29 LCCs and 26 ATUs would be installed to treat wastewater from the 26 existing recreational cabins. The ATU would be the same systems used in Alternative 1. Treated effluent from the onsite systems would be stored in aboveground wastewater holding tanks, located in the vicinity of the cabins. Aboveground tanks were chosen, because they would require less ground disturbance in an archaeologically sensitive area than below ground tanks. The exact number of storage tanks would be determined during the design phase; however, for this analysis it is assumed up to three 10,000-gallon storage tanks would be required. Typically, a 10,000-gallon storage tank is 13.5 feet tall and 12 feet in diameter. The wastewater from the holding tanks would be used for approved re-use options (that is, irrigate golf course driving range, constructed wetland, and similar). Bellows AFS would work with HDOH to determine the appropriate reuse option and treatment requirements. Once the new systems and storage tanks are installed, the disturbed area would be backfilled and revegetated using a standard seed mix. Alternative 3 would require approximately 1,515 yd³ of excavation and would impact a combined 1.8 acres of land. There are roads and parking areas in close proximity of all the project sites. Construction vehicles will remain on paved surfaces to the greatest extent possible; consequently, the staging area for this activity would be minimal. A detailed description of the estimated project impacts is provided in Table 2-3.

Construction activities would be expected to take 7 months overall, or around 8 days per cabin. The cabin connected to the LCC would be closed during the 8-day construction period. However, all other cabins surrounding the LCCs would remain available for guests during construction.

TABLE 2-3
Estimated Disturbance Calculations by Alternative*

Alternative	Cubic Yards Disturbed	Square Footage Disturbed Acreage Disturbed	Construction Period
Alternative 1	800 yd³ <ul style="list-style-type: none"> Install 26 ATUs at 11.4 feet by 6.33 feet by 8.5 feet (590 yd³) 375 square feet by 0.5 feet for 26 units for irrigation lines (180 yd³) 8 feet by 8 feet by 0.5 feet for LCC Clean Closure or seepage pit conversion for 29 units (34 yd³) 	24,900 square feet 0.57 acres <ul style="list-style-type: none"> 20 feet by 20 feet each for 26 ATUs (10,400 square feet) 375 square feet to install each subsurface drip line for 26 sites (97,500 square feet) 8 feet by 8 feet for LCC Clean Closure or seepage pit conversion for 29 units (1,856 square feet) Construction Staging Area 10 feet by 10 feet for 29 sites (2,900 square feet) 	6 months/ 7 days per cabin
Alternative 2	625 yd³ <ul style="list-style-type: none"> Install 26 ATUs at 11.4 feet by 6.33 feet by 8.5 feet (590 yd³) 	15,150 square feet 0.35 acres <ul style="list-style-type: none"> 20 feet by 20 feet each for 26 ATUs (10,400 square feet) 	4 months/ 5 days per cabin

TABLE 2-3
Estimated Disturbance Calculations by Alternative*

Alternative	Cubic Yards Disturbed	Square Footage Disturbed Acreage Disturbed	Construction Period
	<ul style="list-style-type: none"> 8 feet by 8 feet by 0.5 feet for LCC Clean Closure and seepage pit conversion for 29 units (34 yd³) 	<ul style="list-style-type: none"> 8 feet by 8 feet for LCC Clean Closure or seepage pit conversion for 29 units (1,856 square feet) Construction Staging Area 10 feet by 10 feet for 29 sites (2,900 square feet) 	
Alternative 3	1, 515 yd³ <ul style="list-style-type: none"> Install 26 ATUs at 11.4 feet by 6.33 feet by 8.5 feet (590 yd³) 8 feet by 8 feet by 0.5 feet for LCC Clean Closure and seepage pit conversion for 29 units (34 yd³) 3,000 feet by 2 feet by 4 feet pipeline (890 yd³) 	78,000 square feet 1.80 acres <ul style="list-style-type: none"> 20 feet by 20 feet each for 26 ATUs (10,400 square feet) 8 feet by 8 feet for LCC Clean Closure for 29 units (1,856 square feet) Construction Staging Area for LCCs and ATUs 10 feet by 10 feet for 29 sites (2,900 square feet) 3,000 feet by 20 feet for pipeline, includes staging (60,000 square feet) 800 square feet for each of 3 tanks (2,400 square feet) 	7 months/ 8 days per cabin
No Action Alternative	34 yd³ <ul style="list-style-type: none"> 8 feet by 8 feet by 0.5 feet for LCC Clean Closure or seepage pit conversion for 29 units (34 yd³) 	4,756 square feet 0.11 acres <ul style="list-style-type: none"> Construction Staging Area 10 feet by 10 feet for 29 sites (2,900 square feet) 8 feet by 8 feet for LCC Clean Closure or seepage pit conversion for 29 units (1,856 square feet) 	2 months/ 3 days per cabin
<p>* Numbers shown here may differ from estimates provided in the proceeding text. The USAF used conservative calculations to ensure the greatest potential environmental impacts were analyzed.</p>			

2.6 Resources Analyzed

This EA identifies the potential impacts to all relevant resource areas that would be required to implement the Proposed Action and alternatives. 40 CFR 1508.27 specifies that a determination of significance requires consideration of context and intensity. Impacts described in this chapter are evaluated in terms of type (beneficial or negative), context (setting or location), intensity (none, negligible, minor, moderate, or significant) and duration (short-term/ temporary or long-term/ permanent). The type, context and intensity of an impact on a resource are explained under each resource area. Unless otherwise noted, short-term impacts are those that would result from the activities associated with a project's construction/ demolition phase and that would end upon the completion of those phases. Long-term impacts are generally those resulting from the operation of the proposed facility or activity. Impact intensities are further defined as follows:

- A **negligible** impact is defined as an environmental effect that is so small it would be difficult to observe and is trivial enough to be disregarded.

- A **minor** impact is defined as an environmental effect that is observable, yet is unlikely to noticeably affect human health, cultural resources or the environment.
- A **moderate** impact is an environmental effect that is observable and may affect human health, cultural resources or the environment.
- A **significant** impact is observable and could cause a major impact to human health, cultural resources or the environment.

Resources have been divided into two groups: resources studied in detail and resources eliminated from further study.

2.6.1 Resources Areas Analyzed

This EA evaluates the potential impacts to the following environmental resources:

- Cultural Resources
- Visual Resources
- Recreational Opportunities
- Water Quality
- Biological Resources
- Utilities and Infrastructure
- Soils
- Air Quality
- Hazardous Materials and Solid Wastes
- Health and Safety
- Noise

2.6.2 Resources Areas Eliminated from Further Analysis

In accordance with the CEQ and with USAF directives to focus analyses on environmental resource areas where there is a potential for significant impact and where the analyses are expected to provide useful information to the decision maker in choosing between alternatives, some resource areas have been eliminated from further study. The rationale for their elimination is summarized as follows.

Ground Transportation: Implementation of the proposed action would have negligible impacts on ground transportation. Short-term, temporary use of a limited number of vehicles would be expected, and no changes to transportation infrastructure would occur.

Socioeconomics: Implementation of the proposed action would have no appreciable effect on the socioeconomic conditions of Hawai'i. No additional onsite personnel would be hired because of implementation of the proposed action, and no population growth is expected.

Geology: Because of the depth of the soils on the site, no modifications to geological formations would occur under the Proposed Action. Therefore, no impacts to geology are expected. Potential impacts to soils are analyzed in Section 4.6.

Environmental Justice: Executive Order (E.O.) 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, requires federal agencies to consider disproportionate risks to minority and low-income communities. Waimānalo and Kailua, the communities surrounding Bellows AFS, have a large concentration of Native Hawaiians (United States Census Bureau, 2010a and b), which constitutes a minority community in the U.S. However, the impacts from the Proposed Action are less than significant and would remain within the boundaries of Bellows AFS. There would be no disproportionate environmental impacts to minority or low-income communities. Potential impacts to Native Hawaiian cultural resources are described in Section 4.1.3.3.

Protection of Children: E.O. 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, requires federal agencies to address disproportionate risks to children. While the Proposed Action site is

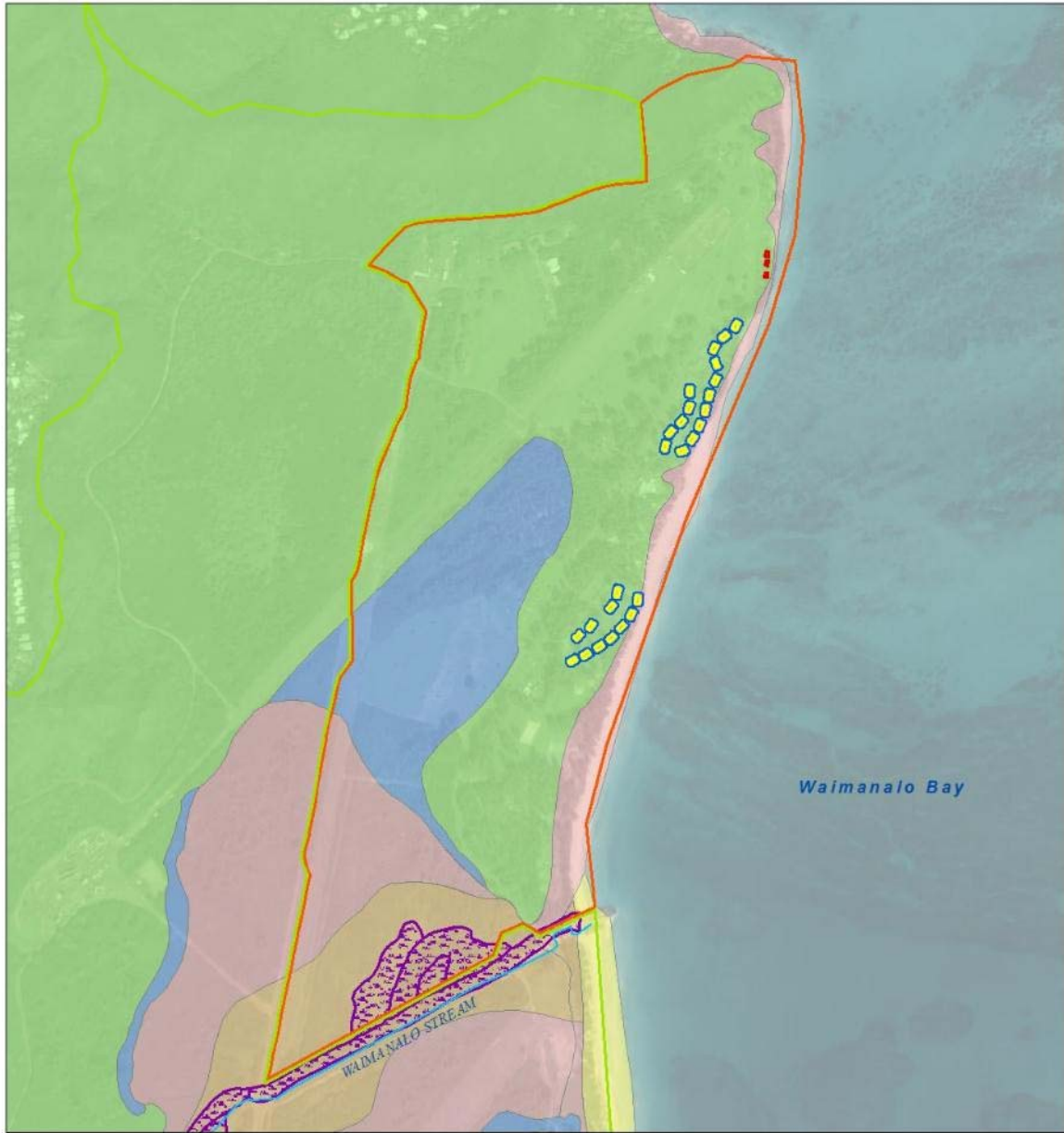
located within a family recreation area, construction areas will be marked off with clear signage to warn families of potential danger, as per standard protocol. There would be no disproportionate health or safety risks expected to children.

Land Use: The Proposed Action would not result in either temporary or permanent changes to land-use designations.

Greenhouse Gases and Climate Change: E.O. 13514, *Federal Leadership in Environment, Energy and Economic Performance*, introduced greenhouse gas (GHG) emissions management requirements for the federal government. On a global basis, the Proposed Action would release negligible quantities of recognized GHG pollutants. As for effects on global warming, the overall Proposed Action would release a small quantity of GHGs during the construction activities and operation of the ATUs. These emissions would be minute compared to the current human-induced releases within the region and in the State of Hawai'i. Further, the resulting GHG emissions would be significantly under federal reporting thresholds. Because the amount of GHG generated is extremely small relative to the emissions from regional and statewide sources, this project would have a negligible impact on GHGs and climate change.

Wetlands: E.O. 11990, *Protection of Wetlands*, and the CWA require federal agencies to minimize the destruction, loss, or degradation to wetlands and to preserve and enhance the natural and beneficial values of wetlands. The Proposed Action activities would be located a considerable distance from all wetland areas on Bellows AFS (Figure 2-3) (Bellows AFS, 2013). Therefore, no impacts to wetlands would result from implementation of the Proposed Action.

Floodplains: E.O. 11988, *Floodplain Management*, requires federal agencies to take actions to reduce the risk of flood loss, and to avoid environmental impacts in floodplains. The Proposed Action area is located in area designated as Flood Zone X by the Federal Emergency Management Agency (FEMA) (FEMA, 2011). FEMA describes Flood Zone X as an area outside the 500-year flood, which means it has less than a 0.2 percent chance to flood annually (see Figure 2-3).



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Affected Environment

This section presents specific information about the environment that could be adversely affected as a result of implementing the Proposed Action. Potential impacts resulting from the Proposed Action are detailed in Section 4.0.

3.1 Cultural Resources

The USAF is required under federal law to ensure that cultural resources are considered in all of its undertakings and that significant resources are protected to the extent possible. The most relevant federal laws pertaining to cultural resources for the proposed action are the NHPA of 1966, the Archaeological Resources Protection Act (ARPA) of 1979 and the NAGPRA of 1990.

The NHPA is generally considered the foundation for the preservation of cultural resources (or “historic properties”) in the U.S. The NHPA defines historic properties as any prehistoric or historic district, site, building, structure, or object included in or eligible for the National Register of Historic Places (NRHP). The NRHP is a federally maintained list of historic properties significant in American history, prehistory, architecture, archeology, engineering or culture. To be listed in the NRHP, a property must have historic significance and integrity and generally be at least 50 years old. Certain properties less than 50 years old can be eligible if they possess exceptional importance. Under NHPA, a property is significant if it meets the NRHP criteria listed in 36 CFR 60.4. These criteria include the following:

- Criterion A: Association with events that have made a significant contribution to the broad patterns of our history
- Criterion B: Association with the lives of persons significant in our past
- Criterion C: Embodiment of the distinctive characteristics of a type, period, or method of construction or representative of the work of a master or possessing high artistic value, or that represent a significant and distinguishable entity whose components may lack individual distinction.
- Criterion D: Yielding, or likely to yield, information important in prehistory or history

Known cultural resources on Bellows AFS include archaeological sites, Native Hawaiian burials, and World War II and Cold War era buildings (Bellows AFS, 2008). For the purpose of this analysis, the APE for cultural resources is considered the area surrounding the affected cabins and the LCCs (Figure 3-1). The APE was provided to SHPD as part of the archaeological inventory report included with the finding of effect correspondence.

Cultural resources have been separated into three categories for this analysis: archaeological resources, Native Hawaiian cultural resources, and historic resources.



- Area of Potential Effects
- Cabins Currently Served by LCCs
- Demolished Cabins Served by LCCs
- Potential Locations for On-Site Systems
- Bellows AFS

0 500 1,000 Feet



Figure 3-1
Area of Potential Effects
for Cultural Resources
Bellows Air Force Station, Oahu, Hawaii

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3.1.1 Archaeological Resources

Archaeological resources are places where past peoples left physical evidence of their occupation. Archaeological resources may include structural ruins or deposits of prehistoric occupation debris such as artifacts and food remains (seed, shells, and bones). Archaeological resources, if eligible for listing in the NRHP, typically are eligible under Criterion D (research potential), but other eligibility criteria may also apply.

The Native Hawaiian archaeological resources on Bellows AFS contain uniquely preserved evidence important to deciphering the estimated 1,500-year-old sequence of Native Hawaiian cultural development in the region (Bellows AFS, 2008). One of the most significant Native Hawaiian cultural sites on O'ahu is found on Bellows AFS, the Bellows Dune Site. However, this site is located a 1/3 mile from the Proposed Action APE.

The area within the APE is heavily impacted and has undergone extensive mechanical disturbance, which would have an effect on the quality of archaeological resources in the area. Nonetheless, the APE is located within two known archaeological sites, and adjacent to one other. Artifacts discovered in these areas (which include charcoal, bones, fire pits, and human remains) date back to as early as the 13th century and indicate early occupation (Bellows AFS, 2008). Human remains are discussed further in Section 3.1.2.

3.1.2 Native Hawaiian Cultural Resources

Native Hawaiian cultural resources may include human skeletal remains, funerary and sacred items, and objects of cultural patrimony. Native Hawaiian traditional resource procurement areas and culturally important regional landscapes are also considered Native Hawaiian cultural resources.

Traditional Hawaiian burials have been identified on Bellows AFS, and it is expected that other currently unidentified burial sites also exist potentially within the proposed action APE. In the event human skeletal remains or burial items are encountered during construction activities, all work in the immediate area will halt and all guidelines and procedures outlined in NAGPRA will be followed.

Outside of the prehistoric burial sites, which would qualify for listing in the NRHP under Criterion D, there do not appear to be any other landscapes or sites within Bellows AFS that hold cultural significance to Native Hawaiians. A review of literature and oral interviews with Waimānalo residents identified no ethnographic, non-archaeological resources within Bellows AFS that are of concern to Native Hawaiians (Bellows AFS, 2008).

3.1.3 Historic Resources

Historic resources are defined here as structures and buildings relating to the historic era. For the purpose of this analysis, historic resources are those that pertain to World War II and the Cold War, as these are the only potential historic resources located within the APE.

There are numerous resources on Bellows AFS associated with the 7 December 1941 Japanese attack on Pearl Harbor (and Bellows Field) and the U.S. response to the attack. However, the resources associated with this historic event are located a substantial distance from the project APE (Bellows AFS, 2008). All of the buildings and structures located within the APE are post World War II construction and are not architecturally significant. However, these structures do relate to the Cold War historic period as they served as rest and relaxation facilities for Vietnam War servicemen during their tours. Most are over 50 years old, with the majority built in 1959 (see Table 3-1). These recreational buildings have not been evaluated for NRHP eligibility, but are potentially eligible under the Cold War-era historic context as an active-duty Vietnam War servicemen rest and relaxation facility at Bellows AFS (Bellows AFS, 2008). They may also be significant because the facilities periodically hosted important, high profile visitors (such as, American statesmen and their families), whose presence could add to the historic significance of the recreation center as a place of refuge during the tumultuous years of war in Southeast Asia. Therefore, the 29 recreational cabins in the APE may be eligible for the NRHP under Criterion A. As formal determinations of eligibility have

not been done, these structures will be treated as eligible for the NRHP for this undertaking per the requirements of Air Force Instruction (AFI) 32-7065.

TABLE 3-1
NRHP Eligible Cabins in the APE

Building Numbers	Construction Date	Description	NRHP Eligibility
Northern Area			
315 – 329 (15 cabins)	1959	Recreational Lodging – each building is a simple, one-story residence of concrete masonry unit (CMU) block under a gable roof with wooden rafters and asphalt shingles	Eligibility not determined; treated as eligible for the purposes of Section 106
Southern Area			
232 – 242 (11 cabins)	1959	Recreational Lodging – each building is a simple, one-story residence of CMU block under a gable roof with wooden rafters and asphalt shingles	Eligibility not determined; treated as eligible for the purposes of Section 106

3.2 Recreational Experience

Bellows AFS strives to provide exceptional recreational and leisure programs that support the well-being and morale of US military personnel and their guests. The 26 equipped cabins affected by the Proposed Action are highly desired by guests staying at Bellows AFS, because these cabins are steps away from a popular beach. Bellows AFS serves over 500,000 guests annually and the occupancy rate for equipped cabins is greater than 90 percent annually.

3.3 Visual Resources

Visual resources include the aesthetic and visual quality associated with a cultural district or a scenic viewshed. They encompass elements from both the built and natural environments, and can include buildings, other visible infrastructure, trees, water bodies, corridors, and landscapes.

Potential important visual resources on Bellows AFS include areas around historic sites, as well as areas that allow unobstructed views of the ocean and mountains adjacent to Bellows AFS.

3.4 Water Resources

Water resources have been broken into two categories for this analysis: groundwater and surface water.

3.4.1 Groundwater

Bellows AFS is within the Waimānalo watershed, Aquifer Sector Area Number 30604 (figure 3-3). The sector area number is a 5-digit code describing the general location and attributes of the aquifer area. Sector Area 30604 is located on the island of O’ahu (3), in the Windward aquifer sector (06) and Waimānalo aquifer system (04). Aquifer characteristics vary with the type of volcanic host rock. Hawaiian volcanic rocks are similar in their basaltic composition, but how they were intruded defines their geologic characteristics and hence their permeability and water yield properties. For the island of O’ahu, hydraulic conductivity values are estimated to vary from 500 to 5,000 feet per day (Nichols et al., 1996).

Aquifers on Windward O’ahu are characterized by dike-impounded aquifer systems (Oki and Brasher, 2003) (Figure 3-2). Dike-impounded aquifer systems are found in the Ko’olau and Wai’anae rift zones where dikes have intruded other rock. Dike compartments form when relatively less permeable volcanic dikes form compartments containing more permeable lava (Nichols et al., 1996). Sedimentary deposits can confine the

dike-impounded water at lower elevations such that, in some portions of the watershed, streams can gain water by groundwater discharge from the underlying volcanic rocks through the sedimentary deposits (Oki and Brasher, 2003). Closer to the coast, the stream can also lose water to groundwater.

Aquifers within Aquifer Sector Area 30604 are given a unique aquifer code. Bellow AFS is underlain by upper and lower aquifers given aquifer codes 30604116 and 30604122, respectively. The first five digits are the sector area number, and the remaining three digits refer to the type of aquifer and geologic unit. The upper aquifer underlying Bellow AFS (aquifer code 30604116) is basal (1), unconfined (1), and hosted in sedimentary volcanic rock (6). The lower aquifer (aquifer code 30604122) is basal (1), confined (2), and hosted in a dike compartment (2) (Mink and Lau, 1992).

The upper and lower aquifers are also given a status code that summarizes five attributes: development stage, utility, salinity, uniqueness, and vulnerability to contamination. The upper aquifer is given status code 12211 and the lower aquifer status code 11113. For the upper aquifer, the aquifer code denotes currently used (1), ecologically important (2), of low salinity (2), irreplaceable (1), and highly vulnerable (1). The lower aquifer is characterized as currently used (1), drinking water source (1), freshwater in contact with seawater (1), irreplaceable (1), and having low vulnerability to contamination (3) (Mink and Lau, 1992).

The State of Hawai'i administers a UIC program developed to protect the water quality of groundwater resources used for drinking water. HAR 11-23 describes the delineation of a UIC line "which separates, in plan view, exempted aquifers and underground sources of drinking water." Exempted portions of aquifers, in the horizontal dimension, are lands that are below the UIC line. Bellows AFS is located below the UIC line such that the underlying upper aquifer is not considered a potential source of drinking water. For this reason, drinking water quality is not at risk of contamination.

However, parts of the Waimānalo aquifer system have connectivity between surface-water and groundwater. These interactions depend upon the location within the Waimānalo valley. In upper portions of the watershed, streams gain water from groundwater. In lower reaches of the valley such as where Bellows AFS is located, surface-water and groundwater are generally hydraulically separated from the basal freshwater aquifer by thick sediments (Honolulu Board of Water Supply, 2012). The basal freshwater aquifer floats on seawater under much of the southern and northern portions of O'ahu.

The downstream-most half mile of Waimānalo Creek (before it drains into the ocean) is tidally influenced and brackish (HDOH, 2001b). A brackish transition zone is typical of the interface between freshwater and seawater. This may indicate that groundwater is discharging to the stream from a thin freshwater lens. The stream may also gain or lose water diurnally depending on whether high or low tide is occurring (State of Hawai'i Commission on Water Resource Management, 2008). At high tide, the stream may be gaining brackish water and losing freshwater at low tide. The sandy, highly permeable sediments underlying Bellow AFS facilitate these interactions between surface-water and shallow groundwater of the upper aquifer.

Cesspool effluent may have similar, diurnal interactions with groundwater: discharging to subsurface water and alternately receiving subsurface water. Interactions between the stream and cesspool effluent are likely less significant than interactions with coastal-influenced groundwater.

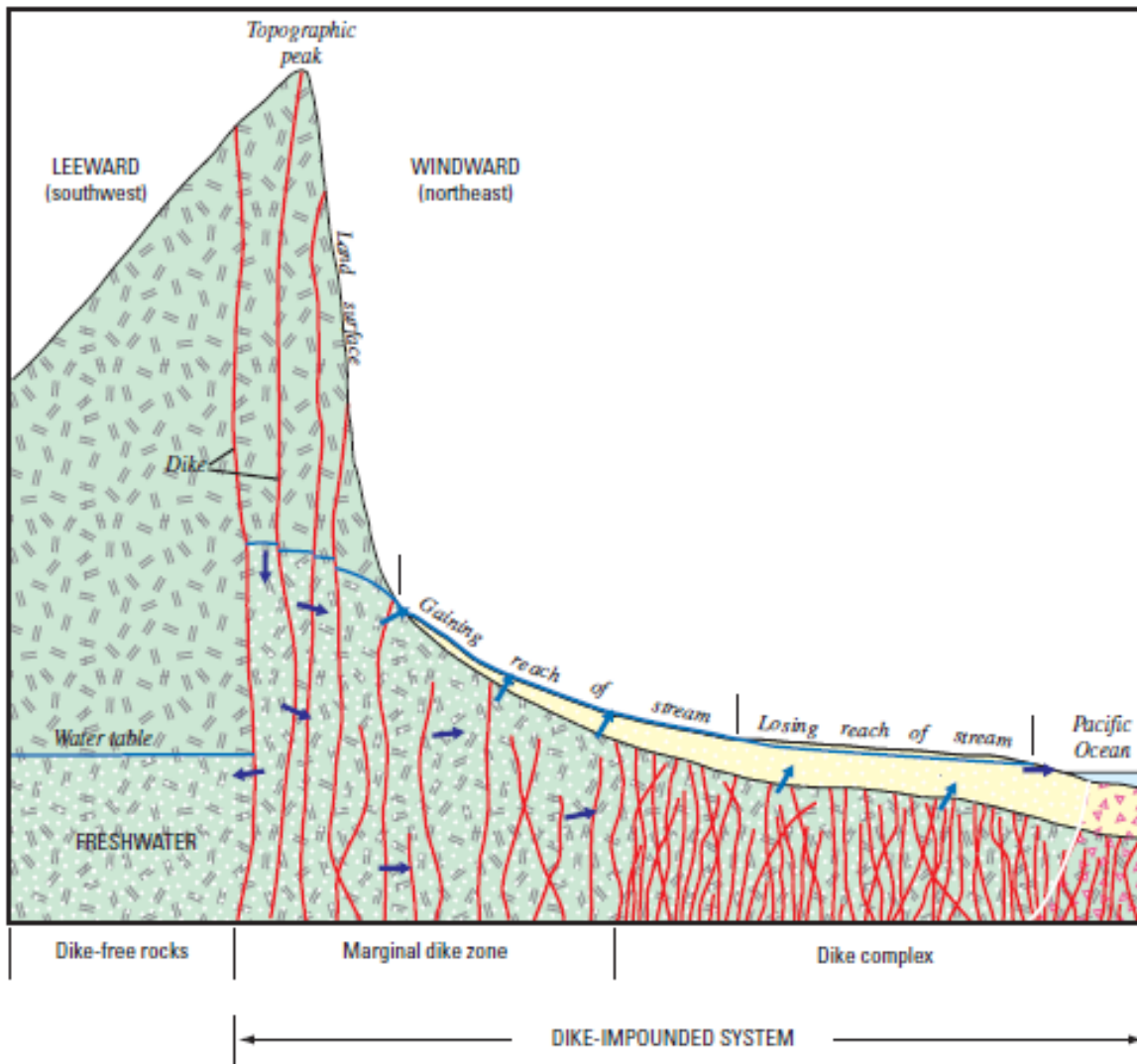
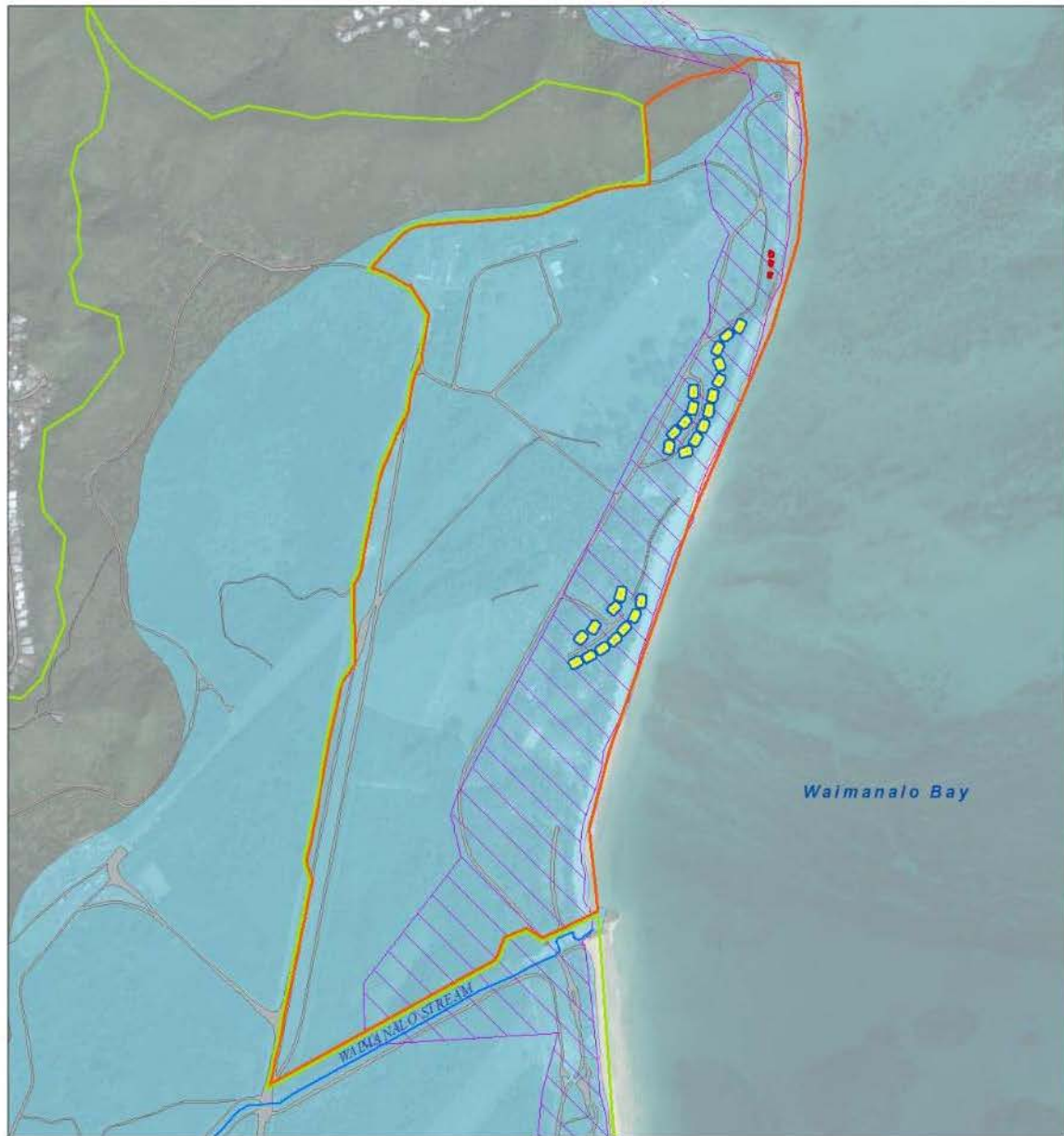


FIGURE 3-2
Dike Impoundment System
Bellows Air Force Station, O'ahu,
Hawaii'i



- Cabins Currently Served by LCCs
- Demolished Cabins Served by LCCs
- Potential Locations for On-Site Systems
- Tsunami Inundation Zone
- Bellows AFS

- Aquifer Sectors**
- Type A - 30604116
 - Type B - 30604122
 - Road Area
 - Stream

0 500 1,000 Feet



Figure 3-3
Bellows AFS Aquifer Sector Areas
Bellows Air Force Station, Oahu, Hawaii

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3.4.2 Surface Water

Bellows AFS is located within the lower portion of the Waimānalo watershed. The watershed drains 11.1 square miles of the Koʻolau Mountains to the west. Waimānalo Stream (formally known as Pūhā Stream) flows through the central part of Bellows AFS from southwest to northeast. Most of this portion of the stream, down to its mouth at Waimānalo Bay, is artificially channelized in a canal-like structure, roughly 4,965 feet in length. Upstream of Bellows AFS, Waimānalo Stream branches into two tributaries (see Figure 1-1). The northern tributary exhibits several short, artificial channel segments interspersed with natural stream reaches. The southern tributary is mostly comprised of natural stream channel segments. Approximately 0.5 mile downstream of the confluence of the two tributaries, the stream becomes tidally influenced and brackish (HDOH, 2001b).

HDOH has classified Waimānalo Stream as a class 2 stream. According to HAR Chapter 11-54-03(b)(2), class 2 waters are protected for uses such as recreation and protection of aquatic life. Despite this classification, water quality within Waimānalo Stream is impaired because of sediments and nutrients (such as nitrate and phosphates) from the watershed, which enter the stream faster than they can be absorbed by the ecosystem. To address this concern, the HDOH developed a Total Maximum Daily Load (TMDL) for Waimānalo Stream. A substantial reduction in nitrate load throughout the watershed was identified as a primary objective. However, TMDLs were calculated for only the perennial freshwater portions of Waimānalo Stream because it is only this portion of the stream that is included on the state 1988 List of Impaired Water bodies (HDOH, 2001b).

Bellows AFS and effected cabins also occur in the tsunami inundation zone, as determined by the National Oceanic and Atmospheric Administration (NOAA) (Figure 3-3). A tsunami is a series of ocean waves generated by sudden displacements in the sea floor, landslides or volcanic activity. A tsunami inundation zone means an area of expected tsunami inundation, based on scientific evidence that may include geographic field data and tsunami modeling.

3.5 Biological Resources

Biological resources are broken into three categories for this analysis: vegetation and wildlife, threatened and endangered species, and migratory birds.

3.5.1 Vegetation and Wildlife

Bellows AFS is located in the Hawaiian High Island ecoregion and dominated by shrubland plant communities (U.S. Forest Service [USFS], 2008). Bellows AFS was historically used for agriculture and developed as an airfield in the 1930s; consequently, there is very little native vegetation remaining on the installation. A number of beach and wetland restoration projects, which included planting of Native Hawaiian species, have been implemented in the vicinity of cabins in the last four years; however these projects are not in the vicinity of the proposed project area. The cabins and LCCs are located within currently landscaped and disturbed areas (Figure 3-4). The landscaped areas consist of maintained lawns and a variety of common introduced ornamental species. Ironwood (*Casuarina equisetifolia*) is the predominant tree species around the cabins (Bellows AFS, 2013).

Because of their isolation, the Hawaiian Islands feature a meager but unique selection of wildlife species. Mammals are relatively rare in Hawaiʻi; most mammal species are introduced, though there is a native bat and marine mammal species. Incidental observations of mammals on the installation include feral cats and mongoose. Marine mammals have been observed on the Bellows AFS shoreline. There are no native species of amphibians or terrestrial reptiles, though introduced species are present. Birds are quite common in Hawaiʻi, and there are many native bird species. Wildlife field surveys were conducted on Bellows AFS as part of the 1996 Resource Inventory (Bellows AFS, 1996). During the survey, 21 species of birds were observed, including 3 migratory shorebirds, 1 native water bird, and 17 introduced land birds.



- Cabins Currently Served by LCCs
 - Demolished Cabins Served by LCCs
 - Potential Locations for On-Site Systems
 - Bellows AFS
 - Wetlands
- Vegetation Type
- Shrub
 - Tree
 - Disturbed

Figure 3-4
Bellows AFS Habitat Types
Bellows Air Force Station, Oahu, Hawaii

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3.5.2 Threatened and Endangered Species

Threatened and endangered species are federally protected plants and animals that are in danger of becoming extinct. The federal ESA requires federal agencies to avoid any actions that might jeopardize the existence of threatened or endangered species, or destroy or adversely impact critical habitat of such species. Federal agencies are required to consult with the USFWS if a proposed action has the potential to impact a federally listed threatened or endangered species. This process is commonly referred to as a Section 7 consultation.

There are currently 163 endangered, 6 threatened, and 17 candidate species present in Honolulu County, Hawai'i (USFWS, 2013a). Of the 186 federally listed species, 10 are known to occur on Bellows AFS. A list of these species is provided in Table 3-2 (Bellows AFS, 2013). There is currently no critical habitat for any threatened or endangered species located on Bellows AFS (USFWS, 2013b).

TABLE 3-2

Federally Threatened and Endangered Species on Bellows AFS

Common Name, Hawaiian Name	Scientific Name	Status	Habitat Type
Birds			
Hawaiian common moorhen, 'ālae 'ūla	<i>Gallinula chloropus sandvicensis</i>	Endangered	Wetlands
Hawaiian coot, 'ālae ke'oke'o	<i>Fulica alai</i>	Endangered	Wetlands
Hawaiian duck, koloa maoli	<i>Anas wyvilliana</i>	Endangered	Wetlands
Hawaiian stilt, ae'o	<i>Himantopus mexicanus knudseni</i>	Endangered	Wetlands
Newell's shearwater, 'a 'o	<i>Puffinus auricularis newelli</i>	Threatened	Marine and Terrestrial
Reptiles			
Green sea turtle, honu	<i>Chelonia mydas</i>	Threatened	Marine
Hawksbill turtle, 'ea	<i>Eretmochelys imbricata</i>	Endangered	Marine
Mammals			
Hawaiian hoary bat, ope'ape'a	<i>Lasiurus cinereus semotus</i>	Endangered	Forest and Open Country
Hawaiian monk seal, 'iliiholo-l-kauaua	<i>Monachus schauinslandi</i>	Endangered	Marine
Humpback whale, kahola	<i>Megaptera novaeangliae</i>	Endangered	Marine

Source: Bellows AFS, 2013

3.5.3 Migratory Birds

The Migratory Bird Treaty Act and E.O. 13186, *Responsibilities of Federal Agencies to Protect Migratory Birds*, require federal agencies to support migratory bird conservation. The legislative definition of migratory birds are species that historically, in the course of their annual migration, traversed certain parts of the U.S., Canada, Mexico, Russia, or Japan. The Migratory Bird Treaty Act protects many common bird species potentially present within the project sites.

3.6 Utilities and Infrastructure

Utilities and infrastructure are evaluated to determine whether upgrades or extensions to current systems are required and if there would be increased maintenance operational resources required to operate the Proposed Action.

3.6.1 Existing Infrastructure

Electricity on Bellows AFS is obtained via the Hawaiian Electric Company. There are currently no electrical capacity concerns on Bellows AFS. Drinking water on Bellows AFS is supplied by the City and County of Honolulu, Board of Water Supply. Wastewater treatment on Bellows AFS is generally comprised of onsite treatment systems, including septic tanks, UICs, and LCCs. The existing LCCs are the focus of this EA.

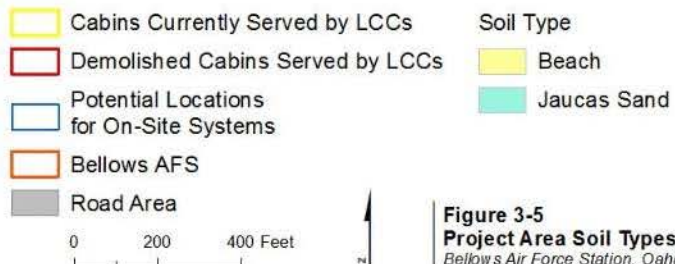
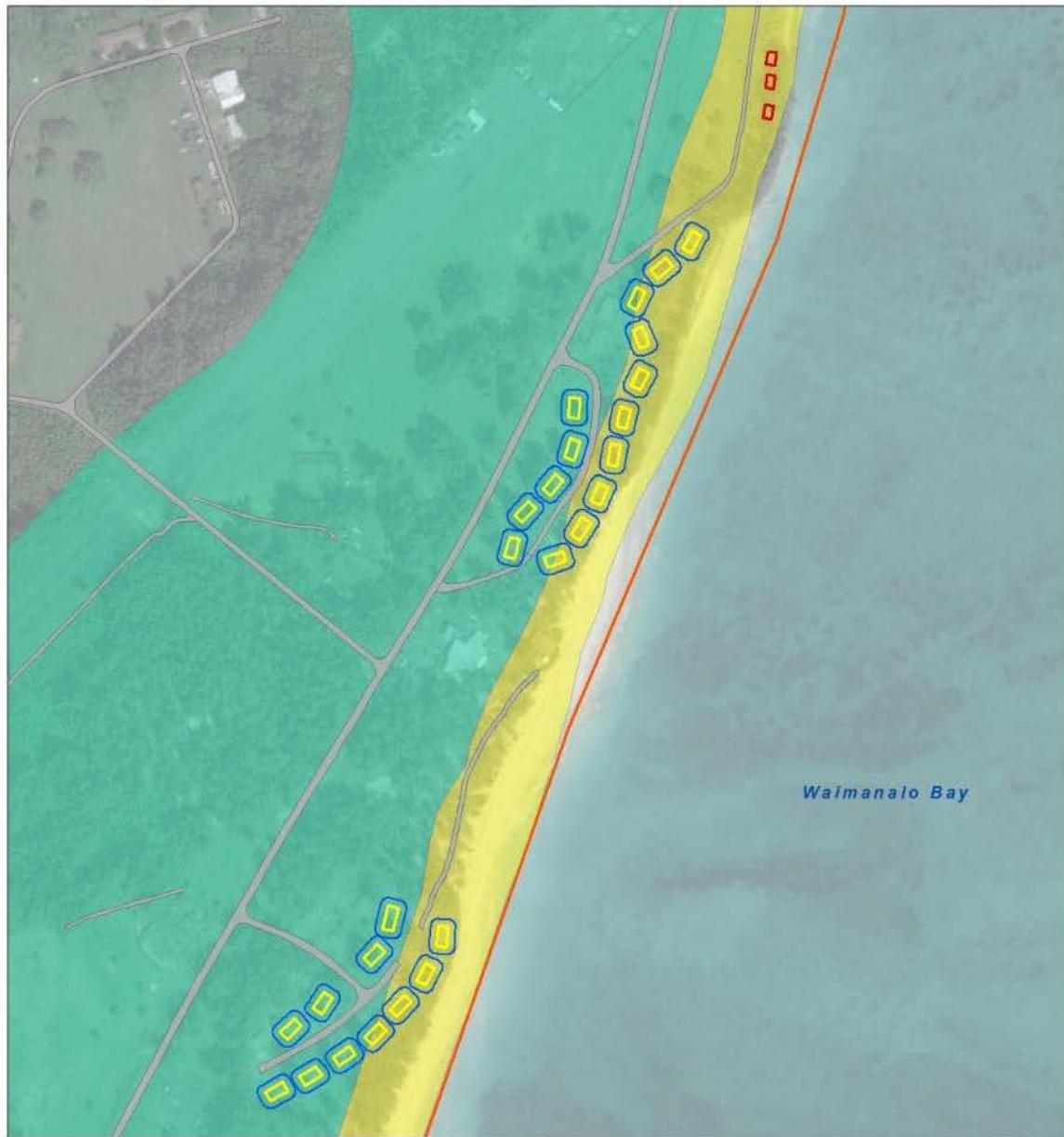
3.6.2 Operations and Maintenance

Infrastructure maintenance is performed by Det. 2, 18 FSS CE on Bellows AFS. Currently the LCCs on Bellows require minimal maintenance. They are inspected periodically and emptied and repaired as necessary. The LCCs have not required emptying in the last several years, primarily because of the permeable soils found onsite.

3.7 Soils

Soils are an integrated expression of the underlying rock, climate, and environmental factors of a region. The Soil and Water Resources Conservation Act of 1977 requires federal agencies to consider the conservation and protection of soil resources in planning activities. There are eight soil types present on Bellows AFS, with the predominant soil type being Jaucas sand (Bellows AFS, 2013).

The soil types present within the action area consist of Jaucas Sand and Beach (Natural Resources Conservation Service [NRCS], 2014) (Figure 3-5). Jaucas Sand and Beach soil types are both comprised primarily of sand and are excessively drained. The primary difference between the two types are the depth to water table: Jaucas Sands are generally more than 80 inches to the water table, while Beach soils are zero inches to the water table. In addition, Jaucas sands are slightly more viable for vegetation establishment compared to Beach soils, though still limited (NRCS, 2014).



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3.8 Air Quality

The Clean Air Act of 1970 (CAA) requires the USEPA to identify National Ambient Air Quality Standards (NAAQS) necessary to protect public health and welfare. The USEPA has determined that the following seven criteria pollutants influence ambient air quality:

- Carbon monoxide (CO)
- Lead (Pb)
- Nitrogen dioxide (NO₂)
- Particulate matter equal to or less than 10 microns in diameter (PM₁₀)
- Particulate matter equal to or less than 2.5 microns in diameter (PM_{2.5})
- Ground-level ozone (O₃)
- Sulfur dioxide (SO₂)

The USEPA has established atmospheric concentration limits for these seven pollutants. When atmospheric concentrations are below the limits for the pollutants for a defined period, an area is defined as in attainment. If atmospheric conditions are above any of the standards for that defined period, the area is designated nonattainment. Areas previously designated as nonattainment, which receive no NAAQS violations over an extended period, may be re-designated as a maintenance area. The CAA general conformity regulations prohibit federal agencies from taking actions that may conflict with the NAAQS and require federal agencies to perform a general conformity analysis on activities within nonattainment and maintenance areas. The Bellows AFS is located in Honolulu County, Hawai'i, which is in full attainment for all NAAQS (USEPA, 2013a).

3.9 Hazardous Materials and Solid Wastes

3.9.1 Hazardous and Solid Waste Generation

According to the Resource Conservation and Recovery Act of 1976 (RCRA), also referred to as the Solid Waste Disposal Act, a solid waste is "any discarded material, including solid, liquid, semisolid, or contained gaseous material resulting from industrial, commercial, mining, and agricultural operations, and from community activities." A hazardous waste is "a solid waste which because of its quantity, concentration, or physical, chemical, or infectious characteristics may pose a substantial present or potential hazard to human health or the environment when improperly treated, stored, transported, or disposed of, or otherwise managed." The current operations on Bellows AFS generate extremely low amounts of hazardous waste; consequently, Bellows AFS is classified as a Conditionally Exempt Small Quantity Generator under RCRA.

There are no existing hazardous waste sites on Bellows AFS.

3.10 Health and Safety

Health and safety has been broken into two categories for this analysis: human health and safety.

3.10.1 Human Health

The current LCCs on Bellows AFS result in raw, untreated sewage to be discharged directly into the ground, where it can contaminate nearby surface water. However, there are no observations of wastewater reaching the surrounding surface waters. The USEPA has banned the use of LCCs because the discharged effluent may contain pollutants such as phosphates, chlorides, grease, viruses and other chemicals (USEPA, 2013b), all of which could have impacts on human health.

3.10.2 Health and Safety

Health and safety are a high priority on Bellows AFS and activities occurring on the installation comply with applicable Occupational Safety and Health Administration (OSHA) regulations, as well as with USAF safety regulations. Applicable USAF safety regulations include:

- AFI 91-204, *Safety Investigations and Reports*
- AFI 91-301, Air Force Occupational and Environmental Safety, Fire Protection, and Health Program

3.11 Noise

Noise is generally an unwanted, undesirable sound. It can be any sound interfering with communications or other human activities, is intense enough to damage hearing, or is otherwise annoying. Human response to noise varies, depending on the type and individual sensitivity.

The unit of measure for sound levels is the decibel. When describing sound and its effect on human populations, A-weighted (dBA) sound levels are typically used to account for the response of the human ear. The most common unit of measure for noise is the day-night average sound level, which describes a receiver's cumulative noise exposure from all events in a 24-hour period, with events between 10 p.m. and 7 a.m. receiving a 10-dBA penalty because of nighttime noise sensitivity. Existing noise levels on Bellows AFS are consistent with residential, preservation, and open space uses.

3.12 Coastal Zones

Coastal zones are areas where land and large bodies of water interface. These areas tend to be sensitive due to the process of erosion, the unique biota that live in these areas, and the proximity of the human population around coastal zones. The CZMA of 1972 is the United States National policy to preserve, protect, develop, and where possible, restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations. The CZMA requires direct federal activities and development projects to be consistent with approved state coastal programs to the maximum extent practicable. Federal agencies cannot act without regard for, or in conflict with, state policies and related resource management programs that have been officially incorporated into state CZM programs (15 CFR 930).

The entire state of Hawai'i is included within Hawai'i's Coastal Program and coastal boundary. The Hawai'i Office of Planning is the lead agency for the Hawai'i Coastal Zone Management Program. The Coastal Program encourages ocean resource management that balances social, economic, cultural, and environmental considerations.

Environmental Consequences

This section evaluates potential impacts resulting from the action alternatives. The anticipated direct and indirect impacts, considering both short- and long-term project effects were assessed for each resource.

4.1 Cultural Resources

4.1.1 Action Alternative 1 (Preferred Alternative)

4.1.1.1 Archaeological Resources

Although the APE is located in a heavily disturbed area, portions of the Proposed Action area are located within two known archaeological sites, and adjacent to another site. The APE was subject to an archaeological survey in August 2013 (Dye and Sholin, 2014).

The archaeological inventory survey completed for this project included a pedestrian survey of 100 percent of the APE, and the excavation of 27 test trenches throughout the APE. The archaeological inventory survey concluded that 100 percent of the APE had been modified by previous construction activities and use of military structures over the past century. All of the trenches contained disturbed sediments and/or terrestrial fill material associated with the infilling of the area for construction and landscaping. Isolated cultural deposits were encountered in two, possibly three, of the test trenches. The final determination of these sites as traditional Hawaiian in origin is pending identification and radiocarbon dating of wood charcoal from these associations (Dye and Sholin, 2014).

The three cultural deposits identified during the archaeological inventory survey may be components of known archaeological sites. However, because of the previous extensive disturbances from military buildup and construction activities, only isolated or remnant deposits were encountered. The USAF determined that the Proposed Action would have no adverse effect on archaeological resources if archaeological monitoring is conducted during all construction activities.

If a significant historic property is discovered during archaeological monitoring, construction will halt in the vicinity of the discovery and the Bellows AFS cultural resource team will consult with the SHPD regarding the site. In consultation with SHPD, archaeological data recovery may be conducted whenever and wherever significant cultural resources are threatened with damage or destruction in order to mitigate the loss of important scientific data. A data recovery plan will be prepared for SHPD concurrence.

In the event a non-significant cultural deposit or isolated artifact is encountered during archaeological monitoring, all construction activities in the immediate vicinity shall be halted until the deposit/isolate has been recorded in accordance with standard archaeological procedures.

The USAF provided a no adverse effect determination and request for concurrence to the SHPD on 8 April 2014, per Section 106 of the NHPA (see Appendix F for the NHPA Section 106 documentation). The potential effects to archaeological resources after the implementation of the abovementioned minimization measures are expected to be **long-term** and **minor**.

4.1.1.2 Native Hawaiian Cultural Resources

While there are no known Native Hawaiian culturally significant sites within the Proposed Action area (Bellows AFS, 2008), there is a potential to encounter previously undiscovered burial sites or prehistoric human remains within the APE in areas where ground-disturbing activities are proposed. These remains would represent a significant cultural resource to Native Hawaiians and fall under the requirements of NAGPRA. Archaeological monitoring will be conducted during all construction activities and any discoveries will be managed in accordance with applicable provisions of 43 CFR Part 10. An inadvertent discovery plan will be prepared before construction begins. If significant Native Hawaiian sites are exposed during construction, consultation with SHPD and NHOs will be conducted under Section 106. Consultation with the

SHPD and Native Hawaiian Organizations would be required to resolve the adverse effect. If human remains or other burial items are inadvertently discovered during construction or other ground-disturbing activities, activities or work in the vicinity of the discovery will stop and the USAF will take measures to secure the remains and any associated context. The Bellows AFS cultural resource manager would consult with the SHPD and appropriate Native Hawaiian Organizations regarding recovery or preservation, and would seek to resolve the adverse effect under Section 106. The final disposition of remains would occur in accordance with a mutually acceptable written Burial Treatment Plan.

The potential effects to Native Hawaiian cultural resources, if they are present, would be **long-term** and **moderate**, after the implementation of the abovementioned minimization measures.

4.1.1.3 Historic Resources

The affected recreational cabins are eligible for listing in the NRHP under Criterion A. However, the character defining elements of the 26 existing recreational cabins would not be directly impacted. Air blowers (approximately 1 cubic foot in size) and electrical control panels (approximately 2 feet by 2 feet by x 6 inches deep) will be placed either within existing electrical cabinets inside the cabins, or outside of the cabins on or near the proposed treatment units. All other structures and equipment associated with Alternative 1 would remain at ground level and remain within the current visual characteristics of a modern recreation cabin (Figure 4-1).

The immediate setting of the cabins would be temporarily affected during construction, but these effects would be short-term, during the approximately six months of construction activity. After project completion, the setting would be similar to the existing conditions. Therefore, there would be no adverse effect to the recreational cabins.

The potential effects to historic resources would be primarily **long-term** and **minor**.

4.1.2 Action Alternative 2

4.1.2.1 Archaeological Resources

Alternative 2 occurs within the same vicinity of Alternative 1; therefore, the impacts to archaeological resources resulting from Alternative 2 would be similar to Alternative 1 and remain **long term** and **minor**. However, the likelihood of encountering archaeological resources is reduced because of the smaller area of impact.

4.1.2.2 Native Hawaiian Cultural Resources

The impacts to Native Hawaiian cultural resources resulting from Alternative 2 would be similar as Alternative 1 and remain **long term** and **moderate**, though the likelihood of encountering Native Hawaiian burials is reduced because of both the smaller area of impact and minimized digging in native soil.

4.1.2.3 Historic Resources

The impacts to historic resources resulting from Alternative 2 would be the same as for Alternative 1 and remain **long-term** and **minor**.

4.1.3 Action Alternative 3

4.1.3.1 Archaeological Resources

Alternative 3 occurs within the same vicinity of Alternative 1; therefore, the impacts to archaeological resources resulting from Alternative 3 would be similar to Alternative 1 and remain **long term** and **minor**.



Figure 4-1

Typical Cabin with LCC Manhole Cover
Bellows Air Force Station, O'ahu, Hawai'i

However, the likelihood of encountering archaeological resources is increased because of the larger area of impact.

4.1.3.2 Native Hawaiian Cultural Resources

The impacts to Native Hawaiian Cultural resources resulting from Alternative 3 would be similar to Alternative 1 and remain **long term** and **moderate**.

4.1.3.3 Historic Resources

Alternative 3 would result in the placement of permanent aboveground wastewater holding tanks within the vicinity of buildings eligible for listing in the NRHP. The wastewater holding tanks would hold 10,000 gallons each and be approximately 13.5 feet by 12 feet each. The tanks would be located in a centralized area and would not be directly adjacent to a cabin or group of cabins. However, they may still be visible from the cabins and would impact the visual characteristic of the area and could result in **long term** and **moderate impacts** to historic resources.

4.1.4 No Action Alternative

Construction activities would also occur under the No Action Alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). The impacts to archaeological and Native Hawaiian resources would be similar to Alternative 1, though the likelihood of encountering archaeological resources or Native Hawaiian burials is reduced because of both the smaller area of impact and minimized digging in native soil. The impacts to historic resources would be **negligible** because there would be no permanent above ground structures required under the No Action Alternative.

4.2 Recreational Experience

4.2.1 Action Alternative 1 (Preferred Alternative)

Alternative 1 would require the equipped cabins associated with a LCC to be shut down for an estimated 7 days each, while the LCC is removed and the new wastewater system installed. However, all other surrounding cabins would remain available. Resulting impacts to visual resources and noise during construction are discussed in Sections 4.3 and 4.12 respectively. The unavailability of 26 equipped cabins for 7 days each would result in a **short-term** and **minor impact** to cabin availability.

4.2.2 Action Alternative 2

Impacts associated with Alternative 2 would be similar to those described for Alternative 1 and remain **short-term minor**.

4.2.3 Action Alternative 3

Impacts associated with Alternative 3 would be similar to those described for Alternative 1 and remain **short-term minor**.

4.2.4 No Action Alternative

All of the 26 cabins associated with the LCCs would be permanently shut down under the No Action Alternative. This would result in a **moderate long-term impact** to cabin availability on Bellows AFS, as accommodations for 312 persons per night would no longer be available.

4.3 Visual Resources

4.3.1 Action Alternative 1 (Preferred Alternative)

Impacts to visual resources could result from construction activities within a scenic view shed. While the construction activities for Alternative 1 may last up to 6 months, construction operations at any given cabin would last approximately 7 days, after which time the disturbed area will be graded back to previous conditions and a native seed mix will be applied. The majority of the permanent structures associated with Alternative 1 would be located below ground. All other structures and equipment associated with

Alternative 1 would remain within the current visual characteristics of a modern recreation cabin (Figure 4-1). Resulting impacts to visual resources from construction activities would be **short term** and **minor**.

Alternative 1 would also result in the establishment of new native Hawaiian vegetation gardens over the subsurface drip line, within the vicinity of the effected cabins. Plants will be chosen partly on their aesthetic attributes. Consequently, Alternative 1 would result in a **moderate long-term benefit** to visual resources.

4.3.2 Alternative 2

Impacts to visual resources could result from construction activities within a scenic view shed. While the construction activities for Alternative 2 may last up to 4 months, construction operations at any given cabin would last approximately 5 days, after which time the disturbed area will be graded back to previous conditions and a native seed mix will be applied. The majority of the permanent structures associated with Alternative 2 would be located below ground. All other structures and equipment associated with Alternative 2 would remain within the current visual characteristics of a modern recreation cabin. Resulting impacts to visual resources from Alternative 2 would be **short term** and **minor**.

4.3.3 Alternative 3

Impacts to visual resources could occur because of construction activities and the placement of permanent structures within a scenic view shed. While the construction activities for Alternative 3 may last up to 7 months, construction operations at any given cabin would last approximately 8 days. Permanent wastewater holding tanks (approximately 13.5 feet tall and 12 feet in diameter) would be placed aboveground, within the vicinity of the affected cabins. These holding tanks would be a potential visual obstruction within a scenic view shed. The holdings tanks would also alter the visual characteristics of the cabin area. Resulting impacts to visual resources from Alternative 3 would be **long term** and **moderate**.

4.3.4 No Action Alternative

Construction activities would also occur under the No Action Alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). The impacts to visual resources would be similar to those for Alternative 1, **short-term** and **minor**.

4.4 Water Resources

The proposed wastewater management alternatives use a common advanced onsite treatment system. However, the action alternatives differ in how the treated effluent is disposed. Consequently, all of the alternatives have common water quality impacts associated with the ATUs, but also have distinct water quality impacts associated with each disposal method.

4.4.1 Action Alternative 1 (Preferred Alternative)

4.4.1.1 Groundwater

Alternative 1 would be implemented seaward of the UIC line, and groundwater underneath the proposed project area is not considered a potential source of drinking water. According to the Hawai'i Health Rules (HAR 11-62-33), a household aerobic unit may discharge effluent directly into the groundwater provided the effluent is disinfected, which would be the case for the ATUs to be installed under Alternative 1. Therefore, there would be **no potential impact** to potable groundwater supplies. Impacts to non-potable groundwater would be similar to the impacts to surface water described below, due to the correlation between groundwater and surface water.

4.4.1.2 Surface Water

The ATUs considered for implementation at Bellows AFS are aerobic sewage treatment systems that rely upon settling, aeration, and clarification. Aeration is provided by an electric-powered blower. Under normal operating conditions, water quality impacts would be positive compared to the current LCCs, as concentrations of both nutrients and coliforms would be reduced. The treatment system may be less

effective if incoming wastewater has higher organic loads, higher solids, and higher coliform counts than the treatment system performance specifications. Loss of electrical power or mechanical failure would also impair treatment performance by disabling the aeration function. Decreased effectiveness would be averted by proper maintenance, sustainable power generation and backup storage capacity for untreated wastewater.

Alternative 1 disposes of treated effluent primarily through subsurface drip lines directly into vegetative root zones and allows for backup capacity through conversion of LCCs to seepage pit. The subsurface disposal system will be designed to optimize uptake of treated effluent by vegetation through placement within the top soil and root zone, where biological activity is highest. Utilization of plant evapotranspiration will decrease the transmittal of treated effluent to shallow groundwater. The water application rate will be designed to accommodate the water absorption capacity of the soil and expected plant transpiration rate. As noted in Section 3.4.1, the location of Bellows AFS is in an area where the Waimānalo Stream is brackish, indicating interaction between surface-water and shallow groundwater. This interaction also varies diurnally with high and low tide. Accurate delineation of the vegetation root zone will maximize uptake of treated effluent despite nominal saltwater incursions associated with tides. Minimum requirements for buffer zones between subsurface drip lines will be determined to prevent concentrated areas of disposal. Maintenance of the disposal system to prevent solids buildup and clogging would also occur. Alternative 1 would result in a **moderate benefit** to regional surface water quality, by reducing the risk of untreated wastewater reaching surrounding surface waters. .

Storm surges and catastrophic inundation events such as tsunamis could decrease efficacy of the treatment because the rate and duration of inundation are likely to exceed either the rate of infiltration or evapotranspiration. As pore space between soil and sediments fills with water, excess treated effluent will infiltrate to the underlying upper aquifer. However, the frequency of these storm events is low, compared to the benefit to surface water quality under nominal conditions and such catastrophic events would impact the existing LCCs in the same way.

This alternative has a construction disturbance footprint of collectively 0.57 acre over a period of 6 months. Sediment releases associated with storm water are possible during this period, and could potentially negatively impact water quality. The area of disturbance is less than the threshold (1 acre) to trigger a NPDES Construction General Permit. Nonetheless, site-specific BMPs, such as silt fencing and other erosion control methodologies would be implemented to reduce degradation of water quality from storm water runoff.

4.4.2 Action Alternative 2

4.4.2.1 Groundwater

Because Alternative 2 would occur in the same area as Alternative 1, there would be **no potential impacts** to potable groundwater. The impacts to non-potable ground water would be similar to surface water impacts described in the following sections.

4.4.2.2 Surface Water

In Alternative 2, the LCCs are converted to seepage pits and used as receptacles for treated effluent. However, seepage pits disperse effluent in the subsurface, below the root zone, thereby missing the opportunity for additional biological treatment. Seepage pits may also be too deep for aerobic treatment processes to occur. Alternative 2 would result in a **minor benefit** to regional surface water quality.

The footprint of construction disturbance associated with this alternative is roughly 0.35 acre (collectively) and would occur over 4 months. Sediment releases associated with storm water are possible during this period, and could result in negative **short-term** and **minor impacts** to surface water quality. However, the area of disturbance is less than the threshold (1 acre) to trigger a NPDES Construction General Permit.

4.4.3 Action Alternative 3

4.4.3.1 Groundwater

Because Alternative 3 would occur in the same area as Alternative 1, there would be **no potential impacts** to potable groundwater. The impacts to non-potable ground water would be the same as the surface water impacts described in the following sections.

4.4.3.2 Surface Water

Alternative 3 stores treated effluent in aboveground holding tanks for approved re-use options, such as golf driving range irrigation. This alternative has an increased impact to water quality, as any remaining contaminants may be dispersed directly to the environment with limited vegetative uptake prior to contact by humans or wildlife. **Minor, long-term, negative impacts** to surface water quality would result from Alternative 3.

A NPDES Construction General Permit and associated BMPs would be required to ensure minimal impacts to water quality due to storm water releases, because the potential impact area is collectively 1.8 acres.

4.4.4 No Action Alternative

Under the No Action Alternative, the LCCs would be closed in accordance with HDOH protocols and the cabins would no longer be occupied. Consequently, there would be no further wastewater generation resulting from the cabins. The No Action Alternative would result in a **moderate benefit** to regional surface water quality. The storm water runoff from construction activities could result in **short-term** and **minor** impacts. However, the area of disturbance is less than the threshold (1 acre) to trigger a NPDES Construction General Permit.

4.5 Biological Resources

4.5.1 Action Alternative 1 (Preferred Alternative)

4.5.1.1 Vegetation and Wildlife

Alternative 1 is located in a developed area comprised of disturbed vegetative cover. The prominent vegetation at the project sites is non-native landscaped grass. Although Alternative 1 would result in permanent impacts to approximately 0.57 acre of noncontiguous vegetation from construction activities, the denuded areas would be revegetated using a native seed mix and any noxious weeds would be treated following the Bellows AFS Pest Management Plan (Bellows AFS, 2007). Further, areas above the subsurface drip irrigation would be revegetated using seedlings of Native Hawaiian plant species. Potential plant species are shown in Appendix C. Alternative 1 would result in a **long-term** and **minor benefit** to native vegetation.

Wildlife may be disturbed by noise during construction activities. However, because the project sites are located in a currently disturbed recreational lodging area, which does not represent high habitat value, wildlife disturbance would be **short-term** and **minor**.

4.5.1.2 Threatened and Endangered Species

Though a number of federally protected species have been identified on Bellows AFS (Table 3-1), these species exist primarily in the wetland and marine habitats found on the base. The proposed action area is comprised mainly of disturbed open area and located approximately 1/3 mile from the nearest wetland. No federally listed species are known to use the proposed action area. Consequently, there are **no expected impacts** to threatened and endangered species from the Alternative 1. Bellows AFS consulted with the USFWS under Section 7 of the ESA and obtained concurrence of no effect to federally listed threatened and endangered species. A copy of the consultation correspondence is located in Appendix F.

4.5.1.3 Migratory Birds

The sandy shoreline adjacent to the action area provides foraging habitat for a variety of migratory birds. However, the shoreline is moderately to heavily impacted by recreationalists on weekends and by military personnel during the week, which affects its use by migratory birds. No shorebirds were observed along the

beach during the 1996 Resource Inventory, though migratory birds may still be present (Bellows AFS, 2013). If migratory birds are present in the proposed action area the birds would be expected to vacate the area during construction activities and return after construction is completed. Further, construction contractors will be trained to avoid impacts to any onsite bird species or their nests. If a nest is observed during construction activities, the Bellows AFS Environmental Program Manager will be contacted immediately to assess the situation. Impacts to migratory birds would be **short term** and **minor**.

4.5.2 Action Alternative 2

4.5.2.1 Vegetation and Wildlife

The area of impact for Alternative 2 is in the same vicinity as the Alternative 1 and represents the same habitat type; however, the expected impacted acreage is 0.35 acre, 80 percent smaller than Alternative 1. While the impacts to biological resources are generally considered proportionate to impact acreage, the impact area for all the action alternatives are relatively small compared to regional availability of natural habitat. The resulting negative impacts to vegetation and wildlife resources from Action Alternative 2 would be similar to those for Alternative 1, **short term** and **minor**. However, Native Hawaiian vegetation islands would not be installed under Alternative 2.

4.5.2.2 Threatened and Endangered Species

Alternative 2 is outside the range of any known threatened or endangered species on Bellows AFS. There are **no expected impacts** to threatened or endangered species from Alternative 2.

4.5.2.3 Migratory Birds

The habitat present in Alternative 2 is the same as for Alternative 1 and similar environmental protection measures would be implemented. Any impacts to migratory birds would be **short term** and **minor**.

4.5.3 Action Alternative 3

4.5.3.1 Vegetation and Wildlife

The area of impact for Alternative 3 is in the same vicinity as Alternative 1 and represents the same habitat type; however, the expected impacted acreage is 1.8 acres, 20 percent smaller than Alternative 1. While the impacts to biological resources are generally considered proportionate to impact acreage, the impact area for all the action alternatives are relatively small compared to regional availability of natural habitat. The resulting impacts to vegetation and wildlife resources from Alternative 3 would be similar to those for Alternative 1, **short term** and **minor**. However, Native Hawaiian vegetation islands would not be installed under Alternative 3.

4.5.3.2 Threatened and Endangered Species

Alternative 3 is also outside the range of any known threatened or endangered species on Bellows AFS. There are **no expected impacts** to threatened or endangered species from Alternative 3.

4.5.3.3 Migratory Birds

The habitat present in Alternative 3 is the same as Alternative 1 and similar environmental protection measures would be implemented. Any impacts to migratory birds would be **short term** and **minor**.

4.5.4 No Action Alternative

Construction activities would also occur under the no action alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). The impacts to biological resources would be similar to the action alternatives.

4.6 Utilities and Infrastructure

4.6.1 Action Alternative 1 (Preferred Alternative)

4.6.1.1 Existing Infrastructure

The new onsite systems would require the use of electricity; however, the existing energy system on Bellows AFS is operating within capacity and could accommodate the increase in energy usage. The impact on either Bellows AFS or regional utility usage would be **minor**.

4.6.1.2 Operation and Maintenance

The new onsite advanced treatment systems would be located within close vicinity of the existing LCCs, which would reduce the need for additional wastewater and electrical piping from the housing areas and reduce the amount of any necessary trenching around the new systems. The new onsite treatment systems would need to be inspected periodically, similar to the current LCCs, though more time may be required given the more complex machinery involved with the onsite systems and the inspection of the subsurface drip disposal. While the new wastewater systems would increase the amount of wastewater infrastructure on Bellows AFS and the required maintenance, the increased operation and maintenance requirements would be **minor** and **long-term**.

4.6.2 Action Alternative 2

Alternative 2 has the same energy requirements as the Alternative 1. Impacts from increased utility usage would remain minor and maintenance requirements would remain **long-term** and **minor**.

4.6.3 Action Alternative 3

4.6.3.1 Existing Infrastructure

The energy requirements for Alternative 3 would be slightly higher than the Alternative 1, because of the need of mechanical pumps to transport the water from the treatment system to the storage tanks. However, the current infrastructure would be able to accommodate the increased usage and the impacts would be **minor**.

4.6.3.2 Operation and Maintenance

Additional resources would be required to periodically empty and dispose the treated effluent in the holding tanks and maintain the pumps. Impacts because of increased infrastructure maintenance requirements would be **long-term** and **moderate**.

4.6.4 No Action Alternative

The cabins would be closed to use under the No Action Alternative; consequently, there would be a net reduction of utility usage on Bellows AFS. However, this reduction would represent a **negligible benefit** to the installation and regional supply, because there are currently no utility shortage concerns on the installation. There would also be a **moderate benefit** from the reduction of infrastructure maintenance requirements on Bellows AFS.

4.7 Soils

4.7.1 Action Alternative 1 (Preferred Alternative)

Soils would be disturbed during the construction activities at the project sites. Once soils are disturbed and exposed, the potential for soil erosion would be increased. Soil erosion can result in indirect impacts to air and water quality through fugitive dust and excessive sedimentation in receiving waters. BMPs would be implemented at the construction site to control fugitive dust and sedimentation. BMPs for soil erosion include soil binders in areas exposed for an extended period and the implementation of erosion control devices, such as silt fences around construction sites. All bare soils located with the Jaucas sand soil type will be revegetated using native plant seed mix upon construction completion and native Hawaiian vegetation will be planted over the drip lines. Impacts to soils from Alternative 1 would be **short term** and **minor**.

The soils surrounding the LCCs may have relatively high organic and nutrient content; however, because of the excessive drainage indicative of the present soils, any contamination from the LCCs could pass quickly through the substrate to nearby receiving waters (discussed in Section 4.4). Contaminated soils associated with the LCCs do not represent a significant health or safety concern. Nonetheless, any excess excavated material would be handled according to HDOH requirements and transported to an approved landfill.

4.7.2 Action Alternative 2

Alternative 2 is located in the same vicinity as Alternative 1. Impacts to soils would be similar to those for Alternative 1 and remain **short term** and **minor**.

4.7.3 Action Alternative 3

Alternative 3 is located in the same vicinity as Alternative 1. Impacts to soils would be similar to those for Alternative 1 and remain **short term** and **minor**.

4.7.4 No Action Alternative

Construction activities would also occur under the No Action Alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). The impacts to soils would be similar to those for Alternative 1, and remain **short term** and **minor**.

4.8 Air Quality

4.8.1 Action Alternative 1 (Preferred Alternative)

There would be a temporary increase in NAAQS criteria pollutants (primarily CO and fugitive dust) during the construction phase of the proposed action, because of the use of construction equipment and ground disturbance activities. However, the emissions resulting from construction activities would be short term and localized and would only negligibly affect the regional air quality. Further, construction BMPs would be implemented to reduce air quality impacts from dust. These BMPs might include adding chemical soil binders on denuded areas exposed for extended periods, and reseeding denuded soils post construction to prevent dust. Air quality impacts resulting from Alternative 1 are expected to be **short term** and **negligible**. The project area is located in Honolulu County, Hawai'i, which is in full attainment for all NAAQS (USEPA, 2013a); consequently, a general conformity analysis is not required for this project.

4.8.2 Action Alternative 2

Impacts associated with the Alternative 2 would be similar to those described for Alternative 1 and remain **negligible**.

4.8.3 Action Alternative 3

Impacts associated with the Alternative 3 would be similar to those described for Alternative 1 and remain **negligible**.

4.8.4 No Action Alternative

Construction activities would also occur under the No Action Alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). Air quality would be similar to that for Alternative 1 and remain **negligible**.

4.9 Hazardous Materials and Solid Wastes

4.9.1 Action Alternative 1 (Preferred Alternative)

Short-term construction-related impacts from hazardous materials and hazardous waste are anticipated with implementation of Alternative 1. Hazardous materials associated with construction activities include gasoline, diesel, oil, and hydraulic fluids. No hazardous materials will be stored at Bellows AFS during construction. Site-specific BMPs, including handling and adherence to Bellows AFS spill prevention and response protocols by construction contractors, will be implemented to minimize the potential release of

these materials. These BMPs would greatly reduce the potential for impacts from hazardous materials and materials within the LCCs and will be handled in accordance with HDOH protocols (HDOH, 2004).

Calcium hypochlorite will be used to treat effluent after it has gone through the ATU and before injection into the seepage pits. Calcium hypochlorite will not be used on effluent treated through the subsurface drip irrigation. Calcium hypochlorite is a chemical compound commonly used for the disinfection of drinking water and swimming pool water. It can be hazardous in the case of skin contact, eye contact, ingestion or inhalation. All individuals handling calcium hypochlorite will be properly trained and use proper engineering controls, storage techniques, personal protection and spill protocols as described in the applicable safety data sheets (Science Lab, 2005).

Only **long-term and minor impacts** are expected from hazardous materials.

Soil materials excavated around the LCCs are not expected to contain significant levels of contamination, considering the permeability of the native soils. Nonetheless, excavated materials will be transported to an appropriate landfill for disposal. All other waste will be disposed of using the existing Bellows AFS waste receptacles, and materials will be recycled when possible. The impacts resulting from solid wastes are expected to be **minor**.

4.9.2 Action Alternative 2

Impacts associated with the Alternative 2 would be similar to those described for Alternative 1 and remain **long term** and **minor**.

4.9.3 Action Alternative 3

Impacts associated with the Alternative 3 would be similar to those described for Alternative 1 and remain **long term** and **minor**.

4.9.4 No Action Alternative

Construction activities would also occur under the No Action Alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). Impacts resulting from hazardous materials and solid waste would be similar to those for Alternative 1 and remain **long term** and **minor**. However, Calcium hypochlorite would not be used under the No Action Alternative.

4.10 Health and Safety

4.10.1 Action Alternative 1 (Preferred Alternative)

4.10.1.1 Human Health

Untreated wastewater would no longer be injected directly into permeable soils, near a public beach and coastal area, through the implementation of Alternative 1. Wastewater would be treated using a state-of-the-art advanced onsite treatment system, which would remove the majority of contaminants and pathogens from the wastewater before disposal. Once treated, the effluent would be emitted through subsurface drip lines directly into vegetative root zones. Nutrients in treated wastewater would be absorbed by native vegetation and further treated through the evapotranspiration process and biological processes in the soil. Evapotranspiration disposes of wastewater into the atmosphere through evaporation from the soil surface and/or transpiration by plants. Alternative 1 would result in a **long-term** and **moderate benefit** to human health.

4.10.1.2 Safety

The new onsite wastewater treatment systems would be managed in accordance with federal, state, and USAF health and safety regulations and instructions. No new safety hazards would be encountered as part of the operation of the new onsite wastewater systems. The construction contractor would be required to develop and implement a Health and Safety Plan for construction activities to ensure worker and

recreationist safety during construction activities. All construction areas will be clearly marked with appropriate signage. Impacts to safety would be **short term** and **minor**.

4.10.2 Action Alternative 2

4.10.2.1 Human Health

Wastewater effluent under Alternative 2 would be treated to a high standard by the advanced onsite systems, when compared to other standard onsite systems such as septic tanks. While the treated wastewater would not contain the levels of contaminants found in the current LCC effluent, the treated wastewater would still contain a low level of contamination.

Converting the current LCCs into seepage pits would result in dispersing the treated effluent into an oxygen-poor environment below vegetation root zones, where there is no immediate uptake by plants of the treated wastewater, nor the potential for treatment by evapotranspiration. The treated wastewater would likely seep directly into nearby surface water, without receiving the benefits of vegetation evapotranspiration. Alternative 2 would have a **long-term** and **minor benefit** to human health.

4.10.2.2 Safety

Impacts associated with the Alternative 2 would be similar to those described for the Alternative 1 and remain **short term** and **minor**.

4.10.3 Action Alternative 3

4.10.3.1 Human Health

Once wastewater is treated via the advanced onsite systems, it would be piped to a nearby storage tank for potential re-use options (that is, irrigate golf course driving range, constructed wetland, and similar) on Bellows AFS. However, while much cleaner than the current LCC effluent, the water in the holding tanks would still contain a low level of contamination. The evapotranspiration process could still occur once plants are irrigated with the treated effluent; however, the lower quality water could come into direct contact with humans and wildlife before any benefits from vegetative uptake. An option would be to further treat the wastewater before irrigation. However, this would require the construction of a wastewater “package plant” system, which would require additional construction activities and result in further environmental impacts, and which was eliminated as Alternative 5 in Section 2.3.1. For this reason, Alternative 3 would have a **moderate, long-term, negative impact** to human health.

4.10.3.2 Safety

Impacts associated with Alternative 3 would be similar to those described for Alternative 1 and remain **short term** and **minor**.

4.10.4 No Action Alternative

Under the No Action Alternative, the LCCs would be closed in accordance with HDOH protocols and the cabins would no longer be occupied. Consequently, there would be no further wastewater generation resulting from the cabins. The No Action Alternative would result in a **moderate benefit** to human health.

The impacts to health and safety would be the same as those for Alternative 1.

4.11 Noise

4.11.1 Action Alternative 1

The action alternatives would involve the construction of new onsite wastewater treatment systems within the vicinity of a recreational lodging area. Patrons will be permitted to rent adjacent facilities during construction. Construction activities could result in temporarily elevated noise levels to noise-sensitive areas adjacent to the construction site.

Construction equipment used to implement Alternative 1 may include trucks, bulldozers, backhoes, jack hammers, generators, and air compressors. Noise generated by this sort of construction equipment could

produce localized noise events of 100 dBA or higher at the construction site. Construction noise levels at 50 feet typically range between 55 and 88 dBA (Bellows AFS, 2009).

To reduce noise exposure for visitors to Bellows AFS, construction activities would only occur during non-holiday, weekdays and normal work hours (8 a.m. to 6 p.m.), when activities at the cabins is at the lowest levels. If work was to occur outside of a normal work day or hours, a noise abatement plan will be developed and engineering controls will be employed. Construction contractors will follow industry occupational standards for noise exposure, including the use of personal protective gear. Elevated noise levels should not exceed the boundary of Bellows AFS. **Short-term** and **moderate** noise impacts would result from Alternative 1 based on construction noise.

4.11.2 Action Alternative 2

Impacts associated with the Alternative 2 would be similar to those described for Alternative 1 and remain **short term** and **moderate**.

4.11.3 Action Alternative 3

Impacts associated with the Alternative 3 would be similar to those described for Alternative 1 and remain **short term** and **moderate**.

4.11.4 No Action Alternative

Construction activities would also occur under the No Action Alternative, as the LCCs would need to be abandoned in accordance with HDOH protocols (HDOH, 2004). These activities would require the use of construction equipment; however, the cabins would be vacant, and the activities would occur outside the vicinity of sensitive noise receptors. Consequently, the noise impacts resulting from the No Action Alternative would be **short term** and **minor**.

4.12 Coastal Zones

The Proposed Action would occur within the coastal area of Hawai'i. However, based on the Federal Consistency Assessment Form and EA, the Air Force has made the determination that the proposed action would have no significant effects on the coastal zone and is consistent with the Hawai'i Coastal Zone Management Program policies and objectives. An explanation of the rationale for this determination can be found in the Federal Consistency Assessment Form provided in Appendix D. A request for concurrence determination, with supporting documentation, has been submitted to Hawai'i Coastal Zone Management Program, these documents can also be found in Appendix D.

Resources effecting coastal zones, such as recreational opportunities, water quality, visual impacts, cultural resources and biological resources are analyzed fully in the proceeding sections of this EA.

4.12.1 Action Alternative 2

Overall, coastal zone impacts associated with the Alternative 2 would be similar to those described for Alternative 1.

4.12.2 Action Alternative 3

Overall, coastal zone Impacts associated with the Alternative 3 would be similar to those described for Alternative 1.

4.12.3 No Action Alternative

Overall, coastal zone impacts resulting from the No Action Alternative would be similar to those for Alternative 1.

4.13 Cumulative Impacts

Cumulative impacts are defined by the CEQ as “the impact on the environment which results from the incremental impact of the action when added to other past, present or reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertake such other actions” (40 CFR 1508.7). Cumulative impacts can result from individually minor but collectively substantial actions undertaken over a period by various agencies or individuals. Cumulative impacts must occur to the same resources, in the same geographic area, and within the same period as the Proposed Action.

No projects from outside of Bellows AFS were considered relevant to the cumulative impact discussion, because negative project impacts are confined within the boundaries of Bellows AFS. Based on the potential resource impacts and the geographic scope of the action alternatives, the following activities identified in the Bellows AFS Master Plan (Bellows AFS, 2010) were determined to be relevant to cumulative impacts:

- Continued operation and maintenance of cabin facilities
- Reconfigure Bath House Buildings 250, 517, and 601
- Install air conditioning units in recreational cabins

There is a potential for short-term cumulative impacts to visual resources, recreational opportunities, biological resources, soils, air quality, hazardous materials, solid waste, storm water, health and safety, and noise from multiple construction projects occurring simultaneously. However, the projects listed above would not overlap with the Proposed Action activities. Therefore, there are **no potential cumulative impacts** expected to these resources.

The reconfiguration of the Bath House buildings could have a cumulative effect to surface water when combined with the Proposed Action. However, any new construction would likely include the installation of low flow fixtures and upgrades to wastewater infrastructure. Because the Proposed Action would result in a net benefit to surface water quality, **no negative cumulative impacts** are expected.

The abovementioned projects could increase the utility usage on Bellows AFS. However, Bellows AFS utility system is currently running under capacity and would be able to accommodate the additional usage without reduction of quality or service. Cumulative impacts to utilities are expected to remain **negligible**.

The abovementioned projects could also result in cumulative impacts to cultural resources. However, all construction activities on Bellows AFS are evaluated in compliance with Section 106 of the NHPA to determine the potential for adverse effects. Before any action is taken, the SHPD would be consulted and appropriate mitigation measures would be identified and implemented. Because these procedures are in place, cumulative effects to cultural resources resulting from future actions are evaluated and considered before the action is taken. Consequently, cumulative impacts to cultural resources are expected to remain **minor to moderate**.

4.14 Summary

Table 4-1 compares the impacts to resources analyzed in this EA. Impacts are color-coded based on their severity: long-term impacts are shown in shades of orange, short-term impacts are shown in shades of red, and benefits are shown in shades of blue. The darker the shade, the greater the impact.

Based on the intensity definitions provided in Section 2.6 (negligible, minor, moderate and significant) none of the resources analyzed in this document reaches the level of significant for any of the alternatives.

TABLE 4-1
Impact Summary

Impacts	Project Alternatives				BMP or Environmental Protection Measure
	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action Alternative	
Cultural Resources					
Potential impacts to archaeological resources	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	An archaeological monitor will be present during all construction activities. If an artifact is discovered, construction activities would be halted immediately and the artifact will be handled in accordance with NHPA, ARPA, and NAGPRA. A data recovery plan will be prepared for SHPD concurrence.
Potential impacts to Native Hawaiian cultural resources	Long-Term Moderate Impact	Long-Term Moderate Impact	Long-Term Moderate Impact	Long-Term Moderate Impact	Any Native Hawaiian burial sites or prehistoric human remains would be handled in accordance with NAGPRA. The appropriate Native Hawaiian Organizations and Hawai'i SHPD would be consulted regarding recovery and preservation. All construction activities would be halted immediately.
Impacts to historic structures, eligible for the NRHP	Short-Term Minor Impact	Short-Term Minor Impact	Long-Term Moderate Impact	Negligible Impact	Blowers and control panels will be placed within existing electrical cabinets inside the cabins whenever possible.
Recreational Opportunities					
Impacts to cabin availability	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Long-Term Moderate Impact	N/A
Visual Resources					
Impacts to a scenic view shed	Short-Term Minor Impact	Short-Term Minor Impact	Long-Term Moderate Impact	Short-Term Minor Impact	N/A
Installation of Native Hawaiian Gardens	Long-Term Moderate Benefit	None	None	None	N/A
Water Resources					
Impacts to potable ground water	None	None	None	None	N/A

TABLE 4-1
Impact Summary

Impacts	Project Alternatives				BMP or Environmental Protection Measure
	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action Alternative	
Impacts to regional surface waters	Long-Term Moderate Benefit	Long-Term Minor Benefit	Long-Term Minor Impact	Long-Term Moderate Benefit	Advanced Treatment Systems will be regularly maintained and a sustainable power source will be used for pumps. Drip irrigation lines will be adequately spaced to avoid concentration of contaminants under Alternative 1.
Impacts from storm water runoff	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	NPDES Construction General Permit will be obtained for construction activities and all necessary BMPs will be implemented.
Biological Resources					
Impacts to regional vegetation	Long-Term Minor Benefit	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Denuded areas will be revegetated and noxious weeds removed. Native Hawaiian vegetation islands will be installed over subsurface drip lines in Alternative 1.
Impacts to local wildlife	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	N/A
Impacts to threatened or endangered species	None	None	None	None	N/A
Impacts to migratory birds	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Construction contractors will be trained to avoid bird species. If a nest is observed a Bellows AFS Environmental Program Manager will assess the situation.
Utilities and Infrastructure					
Utility usage	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	Negligible Benefit	N/A
Operation and maintenance requirements	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Moderate Impact	Long-Term Moderate Benefit	N/A
Soils					
Increased soil erosion potential	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	BMPs will be implemented at the construction site, including watering bare soils, using chemical soil binders, and revegetating denuded soils.

TABLE 4-1
Impact Summary

Impacts	Project Alternatives				BMP or Environmental Protection Measure
	Alternative 1 (Preferred Alternative)	Alternative 2	Alternative 3	No Action Alternative	
Air Quality					
Increase in NAAQS criteria pollutants during construction	Negligible Impact	Negligible Impact	Negligible Impact	Negligible Impact	BMPs will be implemented at the construction site, including watering bare soils, using chemical soil binders, and revegetating denuded soils.
GHG Emissions and Climate Change					
Increase in GHG emissions during construction and operations	Negligible Impact	Negligible Impact	Negligible Impact	Negligible Impact	N/A
Hazardous Material and Solid Waste					
Use of hazardous material during construction	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	Site-specific hazardous waste management plans will be developed and implemented. Standard controls would be used in the handling of calcium hypochlorite.
Generation of solid waste	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	Long-Term Minor Impact	Excavated soils will be disposed of at an appropriate landfill.
Health and Safety					
Impacts to human health resulting from contact with wastewater effluent	Long-Term Moderate Benefit	Long-Term Minor Benefit	Long-Term Moderate Impact	Long-Term Moderate Benefit	N/A
Impacts to safety	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Short-Term Minor Impact	Construction contractors and Bellows AFS maintenance personnel will follows federal, state, and USAF health and safety regulations. Construction areas will be marked with clear signage.
Noise					
Impacts from construction noise	Short Term Moderate Impact	Short Term Moderate Impact	Short Term Moderate Impact	Short-Term Minor Impact	Construction activities would only occur during non-holidays, weekdays, and normal work hours.

SECTION 5.0

List of Preparers

The following individuals contributed to the preparation of this EA.

TABLE 5-1
List of Preparers

Name	Role	Education	Years of Experience
Richard Manz	Project Manager	B.A. Science M.S. Geology	28
Paul Thies	Senior Technical Consultant	Ph.D. Civil and Environmental Engineering M.S. Water Resources B.S. Forestry	31
Michelle Rau	Lead Author	M.B.A. B.S. Ecology and Evolutionary Biology	17
Marjorie Eisert	Senior Reviewer	B.S Wildlife Biology	24
Douglas Berschauer	Alternative Assessment	Professional Engineer M.S. Environmental/ Hydraulic Engineering B.S. Civil Engineer	30
Karen Williams	Water Quality Author	Professional Engineer Ph.D. Geomorphology M.S. Environmental Engineering B.S. Aerospace Engineering	23
Lori Price	Cultural Resource Senior Review	M.F.A. Historic Preservation B.A. Political Science	18
Tom Dye	Archaeological Inventory Survey	Ph.D. Anthropology M. Phil. Anthropology B.A. Anthropology	30
Leslie O'Connor	Technical Editor	B.A. English	18

SECTION 6.0

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Appendix A
Cabin Facilities Served by LCCs and UICs
that will Be Upgraded or Closed

APPENDIX A

Cabin Facilities Served by LCCs and UIC that will Be Upgraded or Closed

Building Number	Bedrooms and Location	Configuration	Maximum Occupancy	Regulatory Definition
232	2-bedroom, Front Row	Duplex	12	LCC
233	2-bedroom, Front Row	Duplex	12	LCC
234	2-bedroom, Front Row	Duplex	12	LCC
235	2-bedroom, Front Row	Duplex	12	LCC
236	2-bedroom, Front Row (Cabin A is Americans with Disabilities Act (ADA) compliant)	Duplex	12	LCC
237	2-bedroom, Front Row	Duplex	12	LCC
238	2-bedroom, Front Row	Duplex	12	LCC
239	2- Bedroom, Back Row	Duplex	12	LCC
240	2-bedroom, Back Row	Duplex	12	LCC
241	2-bedroom, Back Row	Duplex	12	LCC
242	2-bedroom, Back Row	Duplex	12	LCC
315	2-bedroom, Front Row (ADA compliant)	Duplex	12	LCC
316	2-bedroom, Front Row	Duplex	12	LCC
317	2-bedroom, Front Row	Duplex	12	LCC
318	2-bedroom, Front Row	Duplex	12	LCC
319	2-bedroom, Front Row	Duplex	12	LCC
320	2-bedroom, Front Row	Duplex	12	LCC
321	2-bedroom, Front Row	Duplex	12	LCC
322	2-bedroom, Front Row	Duplex	12	LCC
323	2-bedroom, Back Row	Duplex	12	LCC
324	2-bedroom, Back Row	Duplex	12	LCC
325	2-bedroom, Back Row	Duplex	12	LCC
326	2-bedroom, Back Row	Duplex	12	LCC
327	2-bedroom, Back Row	Duplex	12	LCC
328	2-bedroom, Front Row	Duplex	12	LCC
329	2-bedroom, Front Row	Duplex	12	LCC
445	2-bedroom, Oceanfront (Demolished)	Single	6	LCC
446	2-bedroom, Oceanfront (Demolished)	Single	6	LCC
451	2-bedroom, Oceanfront (Demolished)	Single	6	Underground Injection Control (UIC) (Shared with 452)

Appendix B
Interagency and Intergovernmental
Coordination List



DEPARTMENT OF THE AIR FORCE
THIRTEENTH AIR FORCE
JOINT BASE PEARL HARBOR-HICKAM, HI

10 August, 2013

MEMORANDUM FOR: Mr. Patrick Leonard
U.S. Fish and Wildlife Service
300 Ala Moana Boulevard
Honolulu, Hawaii 96850

FROM: DETACHMENT 2, 18TH FORCE SUPPORT SQUADRON

SUBJECT: Environmental Assessment for Conversion of Large-Capacity Cesspools on Bellows Air Force Station, Hawaii

1. Bellows Air Force Station (AFS) is preparing an Environmental Assessment (EA) for the proposed conversion of 27 large-capacity cesspools (LCCs) on the installation. The EA will analyze three action alternatives and the no action alternative. The action alternatives include the following:

- Close the 27 LCCs and connect the effected cabins to the local wastewater treatment plant
- Replace the 27 LCCs with septic tanks and pipe to a leach field for secondary treatment
- Replace the 27 LCCs with an advanced onsite wastewater system

2. The EA will evaluate potential environmental effects resulting from each of the action alternatives as well as the no action alternative. The EA will also examine the potential cumulative impacts from other past, present, and reasonably foreseeable future proposals occurring within the vicinity of the proposed action.

3. A public information meeting for the EA will be held at 7 PM on 29 August, 2013 at the at the Waimanalo Elementary and Intermediate School cafeteria. The library is located at 41-1330 Kalaniana'ole Highway in Waimanalo. The EA for this proposed action will be available for review approximately February 2014.

4. In order to begin the Endangered Species Act (ESA) Section 7 process, please provide to the contact below an official list of the threatened and endangered species that may be present in the vicinity of the proposed action.

5. Please contact Craig Gorsuch, Environmental Program Manager, Bellows AFS, 515 Tinker Road, Waimanalo, Hawaii 96795 at 808-927-1867 or via email at craig.gorsuch@us.af.mil with any comments or questions.

NHUT DAO, GS-12, USAF
Deputy Commander, Det 2, 18FSS
Bellows Air Force Station

Attachments:

1. Figure 1: Site Overview
2. Figure 2: Project Location 1 of 2, Bellows AFS, Oahu, Hawaii
3. Figure 3: Project Location 2 of 2, Bellows AFS, Oahu, Hawaii



DEPARTMENT OF THE AIR FORCE
THIRTEENTH AIR FORCE
JOINT BASE PEARL HARBOR-HICKAM, HI

10 August, 2013

MEMORANDUM FOR DISTRIBUTION

FROM: DETACHMENT 2, 18TH FORCE SUPPORT SQUADRON

SUBJECT: Environmental Assessment for Conversion of Large-Capacity Cesspools on Bellows Air Force Station, Hawaii

1. Bellows Air Force Station (AFS) is preparing an Environmental Assessment (EA) for the proposed conversion of 27 large-capacity cesspools (LCCs) on the installation. The EA will analyze three action alternatives and the no action alternative. The action alternatives include the following:


- Close the 27 LCCs and connect the effected cabins to the local wastewater treatment plant
- Replace the 27 LCCs with septic tanks and pipe to a leach field for secondary treatment
- Replace the 27 LCCs with an advanced onsite wastewater system

2. The EA will evaluate potential environmental effects resulting from each of the action alternatives as well as the no action alternative. The EA will also examine the potential cumulative impacts from other past, present, and reasonably foreseeable future proposals occurring within the vicinity of the proposed action.

3. A public information meeting for the EA will be held at 7 PM on 29 August, 2013 at the at the Waimanalo Elementary and Intermediate School cafeteria. The library is located at 41-1330 Kalaniana'ole Highway in Waimanalo.

4. The EA for this proposed action will be available for review approximately February 2014. Separate correspondence will be conducted to fulfill Endangered Species Act (ESA) Section 7, National Historic Preservation Act (NHPA) Section 106, and Coastal Zone Management Act (CZMA) requirements.

4. Please contact Craig Gorsuch, Environmental Program Manager, Bellows AFS, 515 Tinker Road, Waimanalo, Hawaii 96795 at 808-927-1867 or via email at craig.gorsuch@us.af.mil with any comments or questions.


NHUT DAO, GS-12, USAF
Deputy Commander, Det 2, 18FSS
Bellows Air Force Station

Attachments:

1. Figure 1: Site Overview
2. Figure 2: Project Location 1 of 2, Bellows AFS, Oahu, Hawaii
3. Figure 3: Project Location 2 of 2, Bellows AFS, Oahu, Hawaii



DEPARTMENT OF THE AIR FORCE
THIRTEENTH AIR FORCE
JOINT BASE PEARL HARBOR-HICKAM, HI

5 August 2013

MEMORANDUM FOR: Mr. William Aila Jr., SHPO and Chair
Department of Land & Natural Resources
601 Kamokila Boulevard, Suite 555
Kapolei, Hawaii 96707

FROM: DETACHMENT 2, 18TH FORCE SUPPORT SQUADRON

SUBJECT: Environmental Assessment for Conversion of Large-Capacity Cesspools on Bellows Air Force Station, Hawaii

1. Bellows Air Force Station (AFS) is preparing an Environmental Assessment (EA) for the proposed conversion of 27 large-capacity cesspools (LCCs) on the installation. The EA will analyze three action alternatives and the no action alternative. The action alternatives include the following:

- Close the 27 LCCs and connect the effected cabins to the Waimanalo wastewater treatment plant
- Convert the 27 LCCs into septic tanks and pipe to a leach field for secondary treatment
- Replace the 27 LCCs with an advanced onsite wastewater system

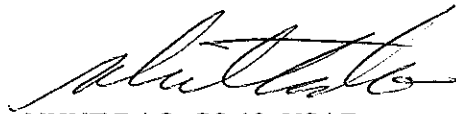
2. The EA will evaluate potential environmental effects resulting from each of the action alternatives as well as the no action alternative. The EA will also examine the potential cumulative impacts from other past, present, and reasonably foreseeable future proposals occurring within the vicinity of the proposed action.

3. A public information meeting for the EA will be held the last week of August. Details for the public information meeting are forthcoming. The EA for this proposed action will be available for review approximately February 2014.

4. Ten of the 27 LCCs are located within the boundaries of significant traditional Hawaiian historic properties, Sites 50-80-15-4854 and -4856 (see attachment 1).

5. An archaeological inventory survey of the areas of potential effect for the second and third alternatives will be carried out in August and September, 2013. The archaeological inventory survey report will be included in the EA.

6. Please contact Craig Gorsuch, Environmental Program Manager, Bellows AFS, 515 Tinker Road, Waimanalo, Hawaii 96795 at 808-927-1867 or via email at craig.gorsuch@us.af.mil with any comments or questions.


NHUT DAO, GS-12, USAF
Deputy Commander, Det 2, 18FSS
Bellows Air Force Station

Attachment: Map of the project location and known historic properties

APPENDIX B

Interagency and Intergovernmental Coordination List

Federal Agencies	
Patrick Leonard U.S. Fish and Wildlife Service	Nova Blazej Region 9 Coordinator U.S. Environmental Protection Agency
Commander, Pacific Division Naval Facilities Engineering Command Environmental Planning Division	Kate Rao LCC Program Coordinator US EPA, Ground Water Office (WTR-9)
Ron Yamada Environmental Protection Specialist, MCBH/LE MCBH	Dean Higuchi Region 9, Pacific Islands Office U.S. Environmental Protection Agency
Commanding Officer Tiffany Patrick	
State Agencies	
The Honorable Neil Abercrombie Governor, State of Hawai'i	State of Hawai'i Department of Defense
Katherine Puana Kealoha, Director Hawai'i State Department of Health Office of Environmental Quality Control	William Aila, Jr., Chairperson State of Hawai'i Department of Land & Natural Resources
Frazer McGilvray, Administrator State of Hawai'i Department of Land & Natural Resources Division of Aquatic Resources	Carty Chang, Chief Engineer State of Hawai'i Department of Land & Natural Resources Engineering Division
Roger Imoto, Administrator State of Hawai'i Department of Land and Natural Resources Division of Forestry and Wildlife	State of Hawai'i Department of Land and Natural Resources Commission on Water Resource Management
Samuel Lemmo, Administrator State of Hawai'i Department of Land and Natural Resources Office of Conservation and Coastal Lands	State of Hawai'i Department of Land and Natural Resources Land Division
Dr. Alan Downer, Administrator State Historic Preservation Division Department of Land & Natural Resources	State of Hawai'i Department of Defense Office of the Adjutant General
Hawai'i Coastal Zone Management Program State of Hawai'i, Office of Planning	Lance Foster Office of Hawaiian Affairs (OHA)

APPENDIX B

Interagency and Intergovernmental Coordination List

Dr. Kamanaʻopono Crabbe Office of Hawaiian Affairs (OHA)	Keith Kawaoka State of Hawaiʻi Department of Health Hazard Evaluation and Emergency Response Office (HEER)
Sina Pruder, Chief Wastewater Branch Environmental Management Division State of Hawaiʻi Department of Health	Clean Water Branch Environmental Management Division Department of Health
City And County Of Honolulu	
Mayor Kirk Caldwell	Chief Engineer Board of Water Supply City and County of Honolulu
City and County of Honolulu Department of Planning and Permitting	Director Department of Design and Construction City and County of Honolulu
Director Department of Parks and Recreation City and County of Honolulu	Waimānalo Wastewater Treatment Plant
Native Hawaiian And Local Organizations	
Hui Mālama I Nā Kūpuna O Hawaiʻi Nei Mr. Edward Halealoha Ayau, Esq.	Beany Koa Hawaiian Civic Club of Waimānalo
Nation of Hawaiʻi Mr. Dennis Kanahale	Historic Hawaiʻi Foundation Ms. Kiersten Falkner, Executive Director
Todd Cullison, Executive Director Hui o Koʻolaupoko	Hawaiian Civic Club of Kailua

Appendix C
Native Hawaiian Plant Species List

APPENDIX C

Native Hawaiian Plant Species List

Hawaiian Name	Genus species	Common Name	Description	Distribution Status	Endangered Species Status
Herbaceous					
‘Ae’ae	<i>Bacopa monnieri</i>	Dwarf bacopa, Water hyssop	Perennial Herb		No Status
‘Akulikuli	<i>Sesuvium portulacastrum</i>	Sea purslane	Succulent herbaceous, low, spreading plant	Indigenous	No Status
Alena or Nena	<i>Boerhavia repens</i>	Red spiderling	Low-growing perennial herb	Indigenous	No Status
‘Ihi	<i>Portulaca lutea</i>	Yellow purslane	Succulent spreading perennial herb	Indigenous	No Status
‘Ihi	<i>Portulaca villosa</i>	Hairy purslane	Succulent spreading perennial herb	Endemic	At Risk
Kīpūkai	<i>Heliotropium curassavicum</i>		Perennial herb	Indigenous	No Status
Kōko’olau or Ko’oko’olau	<i>Bidens sp</i>	Beggarticks	Perennial or annual herbs	Endemic	Depends on species
Nohu	<i>Tribulus cistoides</i>	Caltrop; puncture vine	Low, sprawling, perennial herb with barbed fruit	Indigenous	No Status
Pōpolo	<i>Solanum americanum.</i>	Glossy nightshade	Low, clumping herbaceous groundcover		No Status
Pua kala	<i>Argemone glauca</i>	Hawaiian prickly poppy	Clumping herbaceous	Endemic	No Status
‘Uki ‘Uki	<i>Dianella sandwicensis</i>	Hawaiian lily	Clumping perennial herb	Indigenous	No Status
Grasses & Sedges					
‘Ahu’awa	<i>Cyperus javanicus</i>	Java sedge	Perennial grass	Indigenous	No Status
‘Aki’aki	<i>Sporobolus virginicus</i>	Beach dropseed, Saltgrass, Seashore rush	Creeping perennial grass	Indigenous	No Status
Makaloa	<i>Cyperus laevigatus</i>	Smooth flatsedge	Perennial grass	Indigenous	No Status
Mau’u’aki’aki	<i>Fimbristylis sp.</i>	Button sedge	Perennial sedge	Indigenous	No Status
Mau’u’aki’aki	<i>Fimbristylis cymosa</i>	Button sedge	Perennial sedge	Indigenous	No Status
‘Uki	<i>Cladium jamaicense</i>	Sedge or saw-grass	Perennial sedge	Indigenous	No Status

APPENDIX C

Native Hawaiian Plant Species List

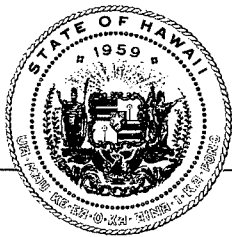
Hawaiian Name	Genus species	Common Name	Description	Distribution Status	Endangered Species Status
Shrubs					
‘Āheahea (‘Āweoweo)	<i>Chenopodium oahuense</i>	Hawaiian goosefoot	Shrub	Endemic	No Status
‘Ākia	<i>Wikstroemia sp.</i>	False ‘ōhelo	Low growing shrub	Endemic	No Status
‘Āweoweo	<i>Chenopodium oahuense</i>	Hawaiian goosefoot	Low drooping shrub	Endemic	No Status
Hinahina kū kahakai	<i>Heliotropium anomalum</i>	Seaside heliotrope	Shrub	Endemic	No Status
‘Iliahi alo‘e	<i>Santalum ellipticum</i>	Coastal sandalwood	Sprawling shrub	Endemic	No Status
‘Ilie‘e	<i>Plumbago zeylanica</i>	White leadwort	Sprawling Shrub	Indigenous	No Status
‘Ilima papa	<i>Sida fallax</i>	Yellow ‘ilima	Low, prostrate shrub	Indigenous	No Status
Koai‘a	<i>Acacia koaia</i>	Dwarf koa	Low shrub	Endemic	At Risk
Koki‘o	<i>Hibiscus kokio saintjohnianus</i>	Hawaiian red hibiscus	Shrub	Endemic	At Risk
Koki‘o ke‘oke‘o	<i>Hibiscus waimeae waimeae</i>	Kaua‘i white hibiscus	Shrub	Endemic	No Status
Kolomona	<i>Senna gaudichaudii</i>	Gaudichaud's senna	Sprawling shrub	Indigenous	No Status
Maiapilo	<i>Capparis sandwichiana</i>	Hawaiian caper	Low spreading shrub	Endemic	At Risk
Māmane	<i>Sophora chrysophylla</i>		Shrub	Endemic	No Status
Ma‘o	<i>Gossypium tomentosum</i>	Hawaiian cotton	Low-growing shrub	Endemic	At Risk
Ma‘oli‘oli	<i>Schiedea globosa</i>		Small sprawling shrub	Endemic	No Status
Naio	<i>Myoporum degeneri</i>		No data	Endemic	No Status
Naio papa	<i>Myoporum sandwicense</i>		Low shrub	Endemic	No Status
Naio shrub	<i>Myoporum sandwicense</i>	Bastard sandalwood	Shrub	Endemic	No Status
Naio	<i>Myoporum stellatum</i>		Shrub	Endemic	At Risk

APPENDIX C

Native Hawaiian Plant Species List

Hawaiian Name	Genus species	Common Name	Description	Distribution Status	Endangered Species Status
Naupaka kai	<i>Scaevola taccada</i>	Beach naupaka	Low-growing perennial shrub	Indigenous	No Status
‘Ōhelo kai, ‘Ae‘ae	<i>Lycium sandwicense</i>	Hawai‘i desert-thorn	Small, spreading shrub	Indigenous	No Status
Pōhinahina	<i>Vitex rotundifolia</i>	Beach vitex	Low, trailing shrub	Indigenous	No Status
‘Uhaloa	<i>Waltheria indica americana</i>	Sleepy morning	Small shrub	Indigenous	No Status
‘Ūlei	<i>Osteomeles anthyllidifolia</i>	Hawaiian hawthorn or rose	Sprawling Shrub	Indigenous	No Status
Vines					
‘Āwikiwiki	<i>Canavalia galeata</i>		Perennial climbing vine	Endemic	No Status
Nanea	<i>Vigna marina</i>	Beach pea	Climbing perennial herb	Indigenous	No Status
Pā‘ūohi‘iaka	<i>Jacquemontia ovalifolia sandwicensis</i>	Oval-leaf clustervine	Sprawling vine	Endemic	No Status
Pōhuehue	<i>Ipomoea pes-caprae</i>	Beach morning glory	Perennial vine	Indigenous	No Status

Appendix D
CZMA Federal Consistency Assessment Form



OFFICE OF PLANNING STATE OF HAWAII

NEIL ABERCROMBIE
GOVERNOR

LEO R. ASUNCION
ACTING DIRECTOR
OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

Ref. No. P-14368

May 1, 2014

Major William A. Cambron, Commander
Department of the Air Force
Bellow Air Force Station
515 Tinker Road
Waimanalo, Hawaii 96795-1903

Attention: Mr. Craig Gorsuch, Detachment 2, 18 FSS/CEE

Dear Major Cambron:

Subject: Coastal Zone Management Act (CZMA) Federal Consistency Negative
Determination for Closure of Cesspools and Implementation of Wastewater
Management and Treatment Measures, Bellows Air Force Station (AFS),
Waimanalo, Oahu

This acknowledges receipt, on April 29, 2014, of the CZMA negative determination for the closure of cesspools and implementation of wastewater management and treatment measures at Bellows AFS, dated April 28, 2014.

This acknowledgement of receipt does not represent an endorsement of the project nor does it convey approval with any regulations administered by any State or County agency. Thank you for your coordinating with the Hawaii CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

Sincerely,

A handwritten signature in black ink, appearing to read "Leo R. Asuncion", is written above the printed name.

Handwritten initials, possibly "L.A.", are written to the left of the printed name.

Leo R. Asuncion
Acting Director

**HAWAII CZM PROGRAM
FEDERAL CONSISTENCY ASSESSMENT FORM**

RECREATIONAL RESOURCES

Objective: Provide coastal recreational opportunities accessible to the public.

Policies:

- 1) Improve coordination and funding of coastal recreation planning and management.
- 2) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:
 - a) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;
 - b) Requiring replacement of coastal resources having significant recreational value, including but not limited to surfing sites and sandy beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;
 - c) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;
 - d) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;
 - e) Encouraging expanded public recreational use of county, State, and Federally owned or controlled shoreline lands and waters having recreational value;
 - f) Adopting water quality standards and regulating point and non-point sources of pollution to protect and where feasible, restore the recreational value of coastal waters;
 - g) Developing new shoreline recreational opportunities, where appropriate, such as artificial reefs for surfing and fishing; and
 - h) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, County planning commissions; and crediting such dedication against the requirements of section 46-6.

RECREATIONAL RESOURCES (continued)

Check either "Yes" or "No" for each of the following questions:

Yes No

- | | | | |
|----|--|-------------------------------------|-------------------------------------|
| 1. | Will the proposed action involve or be near a dedicated public right-of-way? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. | Does the project site abut the shoreline? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 3. | Is the project site near a State or County park? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. | Is the project site near a perennial stream? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. | Will the proposed action occur in or affect a surf site? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 6. | Will the proposed action occur in or affect a popular fishing area? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 7. | Will the proposed action occur in or affect a recreational or boating area? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 8. | Is the project site near a sandy beach? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 9. | Are there swimming or other recreational uses in the area? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion:

Access to the northern beach area (above Waimanalo Stream) of Bellows AFS is restricted to military personnel. In cooperation with the City and County of Honolulu, the southern beach area (below the second gate) is accessible for public use on the weekends. The large capacity cesspool (LCC) closure and upgrade project would occur north of Waimanalo Stream, and would neither improve nor diminish public access to the southern beach. The proposed development would not damage coastal resources having significant recreational values such as surfing sites or sandy beaches.

HISTORIC RESOURCES

Objective: Protect, preserve, and where desirable, restore those natural and man-made historic and pre-historic resources in the coastal zone management area that are significant in Hawaiian and American history and culture.

Policies:

- 1) Identify and analyze significant archaeological resources;
- 2) Maximize information retention through preservation of remains and artifacts or salvage operations; and
- 3) Support State goals for protection, restoration, interpretation, and display of historic resources.

Check either "Yes" or "No" for each of the following questions:

Yes No

- | | | |
|--|-------------------------------------|-------------------------------------|
| 1. Is the project site within a historic/cultural district? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 2. Is the project site listed on or nominated to the Hawaii or National register of historic places? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Does the project site include undeveloped land which has not been surveyed by an archaeologist? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. Has a site survey revealed any information on historic or archaeological resources? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 5. Is the project site within or near a Hawaiian fishpond or historic settlement area? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion:

The project area overlaps two known archaeological sites: Site 50-80-15-4856, a buried traditional Hawaiian cultural deposit containing evidence of habitation activities and human remains and Site 50-80-15-4854, a discontinuous buried traditional Hawaiian cultural deposit and several isolated traditional Hawaiian burials. Both of these sites are eligible for listing in the National Register of Historic Places (NRHP) based on Criterion D. An archaeological inventory survey with subsurface testing was performed for this project. The Air Force is currently consulting with the Hawaii State Historic Preservation Officer (SHPO), to determine the necessary measures to mitigate any disturbance to archaeological sites. The Air Force has committed data recovery program and archaeological monitoring.

SCENIC AND OPEN SPACE RESOURCES

Objective: Protect, preserve and where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies:

- 1) Identify valued scenic resources in the coastal zone management area;
- 2) Insure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
- 3) Preserve, maintain and where desirable, improve and restore shoreline open space and scenic resources; and
- 4) Encourage those developments that are not coastal dependent to locate in inland areas.

Check either "Yes" or "No" for each of the following questions:

	<u>Yes</u>	<u>No</u>
1. Does the project site abut a scenic landmark?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Does the proposed action involve the construction of a multi-story structure or structures?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Is the project site adjacent to undeveloped parcels?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Does the proposed action involve the construction of structures visible between the nearest coastal roadway and the shoreline?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Will the proposed action involve construction in or on waters seaward of the shoreline? On or near a beach?	<input checked="" type="checkbox"/>	<input type="checkbox"/>

Discussion:

All permanent structures associated with the project would be located below ground. The proposed location for the lodging units would not diminish existing views to and along the shoreline.

COASTAL ECOSYSTEMS

Objective: Protect valuable coastal ecosystems from disruption and minimize adverse impacts on all coastal ecosystems.

Policies:

- 1) Improve the technical basis for natural resources management;
- 2) Preserve valuable coastal ecosystems of significant biological or economic importance;
- 3) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land water uses, recognizing competing water needs; and
- 4) Promote water quantity and quality planning and management practices, which reflect the tolerance of fresh water and marine ecosystems and prohibit land and water uses, which violate State, water quality standards.

Check either "Yes" or "No" for each of the following questions:

	<u>Yes</u>	<u>No</u>
1. Does the proposed action involve dredge or fill activities?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the project site within the Shoreline Setback Area (20 to 40 feet inland of the shoreline)?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Will the proposed action require some form of effluent discharge into a body of water?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. Will the proposed action require earthwork beyond clearing and grubbing?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Will the proposed action include the construction of special waste treatment facilities, such as injection wells, discharge pipes, or cesspools?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. Is an intermittent or perennial stream located on or near the project site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7. Does the project site provide habitat for endangered species of plants, birds, or mammals?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
8. Is any such habitat located nearby?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9. Is there a wetland on the project site?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10. Is the project site situated in or abutting a Natural Area Reserve?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
11. Is the project site situated in or abutting a Marine Life Conservation District?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
12. Is the project site situated in or abutting an estuary?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

The project would involve closing 29 LCCs that serve 26 recreational cabins and implement alternative wastewater treatment and disposal facilities for the cabins formerly served by the LCCs. The waste water treatment would involve installing advanced aerobic onsite wastewater treatment systems and disposing of treated effluent using subsurface drip irrigation. The new treatment systems will be compliant with EPA (40 CFR 144.81) and HDOH (HAR 11-23) requirements. The project would result in an improvement in the wastewater effluent quality resulting from the 26 recreational cabins. Construction of the proposed development would require excavation, and

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ECONOMIC USES

Objective: Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies:

- 1) Concentrate in appropriate areas the location of coastal dependent development necessary to the State's economy;
- 2) Insure that coastal dependent development such as harbors and ports, visitor industry facilities, and energy generating facilities are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
- 3) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such development and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:
 - a) Utilization of presently designated locations is not feasible;
 - b) Adverse environmental effects are minimized; and
 - c) Important to the State's economy.

Check either "Yes" or "No" for each of the following questions:

	<u>Yes</u>	<u>No</u>
1. Does the project involve a harbor or port?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2. Is the project site within a designated tourist destination area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
3. Does the project site include agricultural lands or lands designated for such use?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4. Does the proposed activity relate to commercial fishing or seafood production?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5. Does the proposed activity related to energy production?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6. Does the proposed activity relate to seabed mining?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Discussion:

COASTAL HAZARDS

Objective: Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, and subsidence.

Policies:

- 1) Develop and communicate adequate information on storm wave, tsunami, flood erosion, and subsidence hazard;
- 2) Control development in areas subject to storm wave, tsunami, flood, erosion, and subsidence hazard;
- 3) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
- 4) Prevent coastal flooding from inland projects.

Check either "Yes" or "No" for each of the following questions:

Yes No

- | | | | |
|----|--|-------------------------------------|-------------------------------------|
| 1. | Is the project site on or abutting a sandy beach? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. | Is the project site within a potential tsunami inundation area as depicted on the National Flood Insurance Program flood hazard map? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. | Is the project site within a potential flood inundation area according to a flood hazard map? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 4. | Is the project site within a potential subsidence hazard areas according to a subsidence hazard map? | <input type="checkbox"/> | <input checked="" type="checkbox"/> |
| 5. | Has the project site or nearby shoreline areas experienced shoreline erosion? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion:

Storm surges and catastrophic inundation events such as tsunamis could decrease efficacy of the effluent treatment because the rate and duration of inundation are likely to exceed either the rate of infiltration or evapotranspiration. As pore space between soil and sediments fills with water, excess treated effluent will infiltrate to the underlying upper aquifer. However, the frequency of these storm events is low, compared to the benefit to surface water quality under nominal conditions. Nearby shoreline areas have experienced shoreline erosion. However, the proposed development is sufficiently set back from the shoreline, such that shoreline erosion would not impact the LCC closure and upgrade.

MANAGING DEVELOPMENT

Objective: Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies:

- 1) Effectively utilize and implement existing law to the maximum extent possible in managing present and future coastal zone development;
- 2) Facilitate timely processing of application for development permits and resolve overlapping or conflicting permit requirements; and
- 3) Communicate the potential short- and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the general public to facilitate public participation in the planning and review process.

Check either "Yes" or "No" for each of the following questions:

Yes **No**

- | | | | |
|----|--|-------------------------------------|--------------------------|
| 1. | Will the proposed activity require more than two (2) permits or approval?
(Provide the status of each.) | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. | Does the proposed activity conform with the State and County land use designations for the site? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. | Has or will the public be notified of the proposed activity? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 4. | Has a draft or final environmental impact statement or an environmental assessment been prepared? | <input checked="" type="checkbox"/> | <input type="checkbox"/> |

Discussion:

The proposed action requires the following permits and approvals:

NPDES General Permit (to be obtained prior to construction)
CZM Federal Consistency Review (pending)
National Historic Preservation Act Section 106 consultation (pending)

A Draft Environmental Assessment (EA) of the proposed action is enclosed. All comments received during the 30-day public comment period will be considered in preparation of the Final EA.

PUBLIC PARTICIPATION

Objective: Stimulate public awareness, education, and participation in coastal management.

Policies:

- 1) Maintain a public advisory body to identify coastal management problems and to provide policy advice and assistance to the coastal zone management program;
- 2) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal-related issues, developments, and government activities; and
- 3) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion. Please provide information about the proposal relevant to the Objective and Policies No. 2 and No. 3 above:

Public comment on the proposed project will be solicited during the 30-day public comment period for the Draft EA. The Bellows AFS Commander has also provided status updates on the proposed project to the Waimanalo Neighborhood Board, and will continue to do so.

BEACH PROTECTION

Objective: Protect beaches for public use and recreation.

Policies:

- 1) Locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements due to erosion;
- 2) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
- 3) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion. Please provide information about the proposal relevant to the Objective and Policies above:

The proposed project is not located within the shoreline setback and does not involve construction of erosion-protection structures seaward of the shoreline.

MARINE RESOURCES

Objective: Implement the State's ocean resources management plan.

Policies:

- 1) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;
- 2) Assure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
- 3) Coordinate the management of marine and coastal resources and activities management to improve effectiveness and efficiency;
- 4) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
- 5) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
- 6) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

Discussion. Please provide information about the proposal relevant to the Objective and Policies above:

The project would improve the effluent quality generated by the recreational cabins located on Bellows Air Force Station, thereby improving the quality of nearby surface and ground water.

Marine and coastal resources at Bellows AFS are managed consistent with the Integrated Natural Resources Management Plan (INRMP) for Hickam AFB properties (15 AW 2007). The INRMP is a tool for managing natural resources in a coordinated manner within the context of the operational missions on DoD installations. The proposed construction of new wastewater treatment systems would be consistent with the principles of the INRMP.

Appendix E
NHPA Section 106 Consultation Packet



**DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES**

Mr. William Aila, Jr.
Hawai'i State Historic Preservation Officer
State Historic Preservation Division
Kakuhihewa Building, Room 555
601 Kamokila Blvd.
Kapolei, HI 96707

From: Detachment 2, 18 FSS/CC
515 Tinker Road
Waimānalo HI 96795

SUBJECT: Proposed Undertaking - Closure of Cesspools and Implementation of Wastewater Management and Treatment Measures at Bellows Air Force Station

Dear Mr. Aila,

As stated in our previous correspondence with your office, dated August 5, 2013, the U.S. Air Force is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the closure of 29 large-capacity cesspools (LCCs) on Bellows Air Force Station (AFS), and the provision of alternate methods of treating/disposing of wastewater formerly routed to the LCCs. The EA is entitled "Closure of Cesspools and Implementation of Wastewater Management and Treatment Measures at Bellows AFS, in Waimānalo, Ko'olaupoko District, O'ahu Island, Hawai'i." As a federal undertaking, this proposed action is subject to the requirements of 36 Code of Federal Regulations (CFR) Part 800, regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (16 U.S. Code Section 470). The Air Force has applied the criteria of adverse effect and, based on the documentation provided in Enclosure 1 and in accordance with 36 CFR § 800.5(b) and (c), now proposes a finding of no adverse effect for your review.

The three action alternatives and the "no action" alternative are described in greater detail in Enclosure 1, "Description of the Undertaking and Finding of Effect, Large Capacity Cesspool Conversion at Bellows AFS." The current "preferred alternative" is Alternative 1 which proposes to install advanced onsite wastewater treatment systems and dispose of treated effluent using drip irrigation. The existing LCCs would serve as seepage pits for emergency backup disposal of treated effluent. At this time, no decision has been made regarding the alternative that will be selected for implementation. As all three action alternatives would have substantially similar effects upon historic properties if implemented, our findings and request for concurrence are applicable no matter which alternative is ultimately selected.

The following documentation per Section 800.11(e) is included at Enclosure 1 for your review:

- A description of the undertaking including the alternative courses of action currently under consideration.
- A delineation of the Area of Potential Effects (APE).
- A summary description of the efforts made to identify historic properties in the APE.
- A description of the historic properties identified.

- A description of the undertaking's effects on historic properties within the APE.
- The basis for determining those effects.

The APE overlaps two known archaeological sites: Site 50-80-15-4856 and Site 50-80-15-4854. Both of these sites are eligible for listing in the National Register of Historic Places (NRHP) based on Criterion D. To further aid in determining the presence of historic properties, an archaeological inventory survey for the APE, including subsurface testing, was performed by T. S. Dye & Colleagues, Archaeologists, Inc. See the *Draft Archaeological Inventory Survey for the Large Capacity Cesspool Conversion at Bellows AFS* (Dye and Sholin 2014), provided under separate cover, for additional detail.

There are 26 recreational cabins in the APE per the Bellows AFS Integrated Cultural Resources Management Plan (ICRMP), the recreational buildings at Bellows AFS have not been evaluated for NRHP eligibility, but are potentially eligible under the Cold War-era historic context (Vietnam War era). As eligibility determinations have not yet been made, Bellows AFS has elected to treat the 26 cabins within the APE as eligible for purposes of this undertaking.

With this letter the Air Force provides notification of the finding of No Adverse Effect for the undertaking. We appreciate your review of the enclosed information. Please provide your views and indicate whether you concur with this finding of effect within thirty (30) days of your receipt of this letter. Please address your written response to me at the address shown above, with a copy via email to Mr. Craig Gorsuch at craig.gorsuch.ctr@us.af.mil.

If you have any questions regarding this request or the supporting documentation, please contact Craig Gorsuch (Bellows AFS Environmental Program manager) at (808) 259-4213.

WILLIAM A.CAMBRON, Major, USAF
Commander

2 Enclosures:

1. Description of Undertaking and Finding of Effect - LCC Conversion at Bellows AFS (with attachments)
2. Draft Archaeological Inventory Survey for the LCC Conversion at Bellows AFS - provided under separate cover

cc:

Hawaiian Civic Club of Waimānalo
Historic Hawai'i Foundation
Hui Mālama I Nā Kupano 'O Hawai'i Nei
Nation of Hawai'i
Office of Hawai'ian Affairs (OHA)

ENCLOSURE 1
DESCRIPTION OF UNDERTAKING AND FINDING OF EFFECT
Large Capacity Cesspool Conversion at Bellows AFS

SECTION I DESCRIPTION OF THE UNDERTAKING

- A. TITLE OF UNDERTAKING:** Closure of Cesspools and Implementation of Wastewater Management and Treatment Measures at Bellows Air Force Station (AFS), Waimānalo, Koʻolaupoko District, Oʻahu Island, Hawaiʻi
- B. LOCATION:** Waimānalo Ahupuaʻa, Koʻolaupoko District, Oʻahu, identified on tax maps as TMK: (1) 4-1-015:001 [Attachment A]
- C. DESCRIPTION OF PROPOSED UNDERTAKING:**

DESCRIPTION OF THE MISSION/REQUIREMENTS – The purpose of and need for the current proposed action is to support the recreational services mission at Bellows AFS. Bellows AFS recreational facilities are open to all branches of the military, both active duty and retired, and other authorized Department of Defense (DoD) personnel. Bellows AFS has approximately 500,000 personnel and guests per year visiting the installation. In addition, military personnel stationed worldwide are authorized use of these facilities. Thus, Bellows AFS is an important asset to military and other DoD personnel residing within and outside of Hawaiʻi.

DESCRIPTION OF THE PROPOSED ACTION – In a letter dated 12 April 2012, the U.S. Environmental Protection Agency (EPA) revised the classification of the equipped recreational cabins at Bellows AFS as “residential” and asserted that the Large Capacity Cesspools (LCCs) must be upgraded to comply with 40 CFR 144.81(2). Per the EPA requirement for closure of the 26 active LCCs serving 26 existing equipped cabin duplexes and three inactive LCCs, at Bellows AFS, the proposed action is closure of the LCCs in accordance with applicable regulatory requirements and standards, and provision of alternative wastewater treatment and disposal facilities for the cabin duplexes formerly served by the LCCs.

LCC Clean Closure is conducted in accordance with State of Hawaiʻi Department of Health Underground Injection Control abandonment procedures in accordance with Hawaiʻi Administrative Rule (HAR) 11-23-12. These procedures involve pumping all sediment and sludge until the native material at the bottom of the LCC is exposed. During pumping activities, the LCC will be cleaned with high pressure water until native material is exposed. Sediments, sludge, and all wastewater from the cleaning operation will be collected in a vacuum truck and disposed of in accordance with federal, state, and local regulations. The LCCs will then be backfilled with clean native fill and compacted to approximately 3.5 feet from the surface of the LCC lid. Each LCC inlet pipe (from the cabin utilizing that LCC) will be sealed with grout mix. The LCCs will be backfilled with concrete to the top of the LCC lid. The LCC lid will then be covered with native topsoil to match the surrounding conditions. LCC Clean closure procedures described herein does not involve any ground disturbance outside the footprint of the LCC.

When the LCCs are closed, wastewater (including gray water and backwater/sanitary waste streams) must be handled or managed by alternative means. Per the requirements of the National Environmental Policy Act (NEPA), several alternatives are being considered:

Alternative 1 (Preferred Alternative) – Install Advanced Onsite Wastewater Treatment Systems and Dispose of Treated Effluent Using Subsurface Drip Irrigation; convert the existing LCCs to seepage pits for emergency backup disposal.

Under the Preferred Alternative, 26 advanced onsite treatment systems would be installed to treat wastewater from the 26 existing recreational cabin duplexes (cabin numbers 315–329 & 232–242). These systems often offer a higher quality of effluent than traditional systems, such as a septic tank / absorption field. The advanced onsite treatment systems would be located between each cabin (minimum distance of 5 feet from structure per HAR 11-62 Appendix F, Table 2) and near the existing LCC’s (minimum distance of 5

feet from LCC per HAR 11-62 Appendix F, Table 2). For the purposes of this assessment, assume each cabin duplex will be serviced by a single treatment system to be located in the vicinity of the Archeological Inventory Survey (AIS) trench locations. A typical treatment system is depicted in Attachment B and will be comprised of the following components:

1. Aerobic Treatment Unit (ATU) – The ATU would receive raw sewage from each cabin duplex through a newly installed inlet pipe that would be set at an approximate maximum depth of three (3) feet below ground surface (bgs). The ATU will be installed between (adjacent to) the duplexes, which for most duplexes, is within the vicinity of the AIS trench locations. The capacity/size requirement for each ATU is based on predetermined design criteria provide in HAR 11-62, Appendix A, Table 1. In accordance with Hawai'i DOH Wastewater Branch guidance, the establishment type for the 26 existing cabins at Bellows AFS is considered 'Motels with bath, toilet, and kitchen waste (per bed space),' which is set at 50 gallons per person, per day. Each of the 26 duplex cabins can hold a maximum of 12 persons per day. Based on these numbers (12 x 50), each ATU must treat 600 gallons of wastewater per day. The approximate maximum depth for a 600 gallon per day ATU excavation would be 8 feet bgs. The disturbed and newly graded area above the ATU and piping would be re-vegetated with a grass seed mix. Ancillary components to the ATU include an air blower and control panel, both of which are installed above ground. To the greatest extent possible, the air blower and control panels will be situated within existing electrical vaults and mechanical/equipment sheds at each cabin location.
2. Ultraviolet (UV) Disinfection Mechanism – Treated effluent would flow from the ATU directly into a primary UV disinfection mechanism. The purpose of the UV treatment is to eliminate fecal coliforms and pathogens from the treated effluent. The UV treatment mechanism would be contained within a vault which would allow for surface access. The approximate maximum depth of the UV disinfection vault excavation would be 3 feet bgs. A secondary backup disinfection system using chlorine tablets would be installed.
3. Pump Tank – The treated and disinfected effluent will flow from through the UV disinfection mechanism and into the pump tank. A high water float valve will trigger a water pump within the tank to release a prescribed quantity of water out the subsurface drip field. The approximate maximum depth of the pump tank excavation would be 8 feet bgs.
4. Subsurface Drip Irrigation Field – After the water is treated in the ATU and disinfected, the effluent will be dispersed through the pump tank and into the shallow (3-6 inches) drip irrigation area to be located within the vicinity of each cabin duplex location (<25-feet). To minimize ground disturbance, the drip irrigation systems would be raised above the existing ground surface by approximately six (6) inches, utilizing the excavated fill from the advanced onsite system excavations to the greatest extent possible. Disturbance to the existing ground surface will be limited to tilling of the surface vegetation and topsoil to a maximum depth of 6 inches bgs. Once the new systems and drip irrigation line is installed, the area would be backfilled and re-vegetated using native Hawaiian plants. The size of the raised drip irrigation areas will be dependent upon the percolation rate, evaporation rate, annual rainfall, and estimated wastewater flows at each cabin.

In addition to the drip irrigation, the existing LCCs would be converted into seepage pits to serve as backup and emergency effluent disposal. This conversion process would involve pumping all sediment and sludge until the native material at the bottom of the LCC is exposed. During pumping activities, the LCC would be cleaned with high pressure water until native material is exposed. Sediments, sludge, and all wastewater from the cleaning operation would be collected in a vacuum truck and disposed of in accordance with federal, state, and local regulations. A newly installed effluent inlet pipe would be connected from the ATU outlet to the seepage pit inlet. This newly installed pipe would be set at an approximate maximum depth of 5 feet bgs. LCCs that are not needed for use as seepage pits under this alternative would follow LCC Clean Closure procedures.

The Preferred Alternative would require approximately 1,250 cubic yards (yd³) of excavation and would impact 2 acres of land. Construction activities would be expected to take 6 months overall, or around 7 days per cabin.

Alternative 2 – Install Advanced Onsite Wastewater Treatment Systems and Convert the LCCs to Seepage Pits for Disposal of Treated Effluent.

Alternative 2 would install advanced onsite wastewater treatment systems (consisting of items 1 and 2 only as described above under Alternative 1) and convert the existing LCCs to seepage pits as the effluent disposal method. This conversion process would involve pumping all sediment and sludge until the native material at the bottom of the LCC is exposed. During pumping activities, the LCC would be cleaned with high pressure water until native material is exposed. Sediments, sludge, and all wastewater from the cleaning operation would be collected in a vacuum truck and disposed of in accordance with federal, state, and local regulations. Twenty-six advanced onsite wastewater treatment systems would be installed between (adjacent) to each cabin location in the vicinity of the AIS trench locations. Treated effluent from the onsite system would be disposed of in the seepage pits via a newly installed pipe. This newly installed pipe would be set at an approximate maximum depth of 5 feet bgs. LCCs that are not needed for use as seepage pits under this alternative would follow LCC Clean Closure procedures. Once the new systems are installed, the area would be backfilled and re-vegetated using a grass seed mix.

Alternative 2 would require approximately 600 yd³ of excavation and would impact 0.25 acres of land. Construction activities would be expected to take 4 months overall, or around 5 days per cabin.

Alternative 3 - Install Advanced Onsite Wastewater Treatment Systems and Store Treated Effluent in Wastewater Holding Tanks for Approved Re-use Options

Under Alternative 3, LCC Clean Closure procedures would be conducted for all 29 LCCs. Twenty-six advanced onsite treatment systems (consisting of items 1 and 2 only as described above under Alternative 1) would be installed to treat wastewater from the 26 existing recreational cabins. Treated effluent from the onsite systems would be stored in three (3) aboveground wastewater holding tanks, located in the vicinity of the cabins. The tanks would hold 10,000 gallons each and be approximately 32 feet by 8 feet each. The tanks would be located in a centralized area and would not be directly adjacent to a cabin or group of cabins. The wastewater from the holding tanks would be used for approved re-use options (i.e., irrigate golf course driving range, constructed wetland, and similar). Once the new systems and storage tanks are installed, the disturbed areas would be backfilled and re-vegetated using a grass seed mix.

Alternative 3 would require approximately 4,400 yd³ of excavation and would impact 2.5 acres of land. Construction activities would be expected to take 7 months overall, or around 8 days per cabin.

BRIEF DESCRIPTION OF THE “NO ACTION ALTERNATIVE” - The other alternative analyzed is the “No Action” alternative. Under the No Action Alternative, the 29 LCCs serving existing and former recreational cabins would be closed to achieve compliance with the EPA closure order. The extent of ground disturbance would be limited to the footprint of the existing cesspools and any potential surface disturbance from closure activities within immediate vicinity to the cesspool. To the extent that recreational cabins could no longer operate, the cabins would remain in place but would not be occupied or used for recreational purposes.

SECTION II: DESCRIPTION OF AREA OF POTENTIAL EFFECTS

The Area of Potential Effects (APE) for cultural and traditional resources encompasses all areas where ground disturbing activities could occur. The APE for the proposed undertaking is approximately 10.2 acres (ac). The APE is divided into two areas, Areas A and B. Area A consists of two discontinuous areas located in the northern portion of Bellows AFS; Area A North is a 0.26 ac area which encompasses LCCs associated with former buildings 445, 446, and 451 and Area A South is a 6.19 ac area which encompasses buildings 315-329. Area B is an approximately 3.75 ac area located south of Area A, in the central portion of Bellows AFS, and encompasses buildings 232-242. See Attachment A, Figures 2 and 3 for maps of the APE. The APE is the same for all the alternatives.

SECTION III: IDENTIFICATION OF HISTORIC PROPERTIES IN THE APE

Per 36 CFR §800.4 (b) (1) and (2), the U.S. Air Force has made a reasonable and good faith effort to carry out appropriate identification efforts, taking into account the magnitude and nature of the undertaking as well as the nature and extent of potential effects on historic properties.

According to the Integrated Cultural Resource Management Plan (ICRMP 2008), the proposed undertaking occurs in high and low probability areas for encountering cultural resources. The APE overlaps two known archaeological sites. A portion of Area A overlaps Site 50-80-15-4856, a buried traditional Hawaiian cultural deposit containing evidence of habitation activities and human remains. Area B overlaps Site 50-80-15-4854, a discontinuous buried traditional Hawaiian cultural deposit and several isolated traditional Hawaiian burials. Both of these sites are eligible for listing in the National Register of Historic Places (NRHP) based on Criterion D. Also, adjacent to the inland edge of Area B is Site 50-80-15-7071, an isolated traditional Hawaiian burial that was recovered in 2009.

The AIS completed for this project included a pedestrian survey of 100 percent of the APE, and the excavation of 27 test trenches throughout the APE. It appeared that 100 percent of the APE had been modified by construction and use of military structures over the past century. All of the trenches contained disturbed sediments and/or terrestrial fill material associated with the infilling of the area for construction and landscaping. Cultural materials were encountered in two of the test trenches. A pit feature was identified in Trench 1, located in Area A North. This pit yielded a calibrated age range of A.D. 1315-1430, and is considered as component of Site 50-80-15-4856. A cultural deposit was identified in Trench 24, located in Area B. This deposit is considered a component of Site 50-80-15-4854. Both cultural deposits are evaluated as significant for their information content.

There are 26 recreational cabins in the APE. The ICRMP notes that the recreational buildings there have not been evaluated for NRHP eligibility. However, they may be eligible under the Cold War-era historic context and as an active-duty Vietnam War servicemen R&R facility at Bellows AFS. A study is planned for award in 2014 to evaluate these cabins and facilities on Bellows AFS for NRHP eligibility. Therefore, the 26 recreational cabins in the APE, listed in Table 1, are being treated as eligible for the NRHP for the purposes of this undertaking. See Attachment A, Figures 2 and 3 showing the location of the cabins within the APE.

Table 1 – Bellows AFS Recreational Cabins in the APE

Building Numbers	Construction Date	Description	NRHP Eligibility
Area A (Fig. 2, Attachment A)			
315 – 329 (15 cabins)	1959	Recreational Lodging – each building is a simple, one-story residence of concrete masonry unit (CMU) block under a gable roof with wooden rafters and asphalt shingles	Eligibility not determined; treated as eligible for the purposes of Section 106
Area B (Fig. 3, Attachment A)			
232 – 242 (11 cabins)	1959	Recreational Lodging – each building is a simple, one-story residence of CMU block under a gable roof with wooden rafters and asphalt shingles	Eligibility not determined; treated as eligible for the purposes of Section 106

A. HISTORIC PROPERTIES WITHIN THE APE SUBJECT TO DIRECT EFFECTS FROM THIS UNDERTAKING:

The determination of effects to archaeological sites and historic properties within the APE is essentially the same for both the preferred alternative and the other two alternatives considered under NEPA.

The character defining elements of the 26 extant recreational cabins would not be directly impacted. Air blowers (approximately 1 cubic foot in size) and electrical control panels (approximately 2'x 2'x 6" deep) will be placed either within existing electrical cabinets inside the cabins, or outside of the cabins on or

near the proposed treatment units. The installation of this equipment would not have a direct impact on the exterior of the cabins and would not be visible on the cabins or within the cabins.

The immediate setting of the cabins would be temporarily affected during construction, but these effects would be short-term, during the approximately six months of construction activity. After project completion, the setting would be similar to the existing conditions. Therefore, there would be no adverse effect to the recreational cabins.

The cultural deposits identified during the archaeological inventory survey may be components of known archeological sites. However, due to previous extensive disturbances from military buildup and construction activities, only isolated or remnant deposits were encountered. Since the cabins in Area A North no longer exist, the LCCs will be closed and no new wastewater treatment facilities will be installed. Thus, there will be no adverse effect on Site 50-80-15-4856 in Area A North.

No other traditional cultural properties or historic properties have been identified in the areas directly affected by closure of the LCCs, or by construction or operation of new wastewater treatment facilities for the existing cabins formerly served by the LCCs.

If any such properties are later identified, the direct effects are expected to be similar to those effects already identified, and the effects are not expected to be adverse.

B. HISTORIC PROPERTIES WITHIN THE APE SUBJECT TO INDIRECT EFFECTS FROM THIS UNDERTAKING:

No traditional cultural properties or historic properties that could experience indirect effects have been identified.

SECTION IV: FINDING OF EFFECT

Pursuant to §800.5 (b), the U.S. Air Force has determined that this undertaking will have no adverse effect on historic properties. Archaeological monitoring will be conducted during all ground disturbing activities conducted as part of the undertaking. An archaeological and burial treatment plan will be submitted to the State Historic Preservation Division (SHPD) for concurrence prior to commencing construction-related activities.

SECTION V: NATIVE AMERICAN GRAVES PROTECTION AND REPATRIATION ACT (NAGPRA) - HUMAN REMAINS, FUNERARY OBJECTS, SACRED OBJECTS, OR OBJECTS OF CULTURAL PATRIMONY

In areas where ground-disturbing activities are proposed, there is a potential that human remains or other associated items may be encountered. In the event human remains are inadvertently discovered during construction or other ground-disturbing activities, all work in the immediate vicinity of the discovery shall be halted, and all procedures and stipulations outlined in NAGPRA and the burial treatment plan shall be followed.

Note: Attachments have intentionally been left out of this appendix, as level detail is not suitable for public release, as per the Archeological Resource Protection Act (ARPA).



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

8 April 2014

Mr. William Aila, Jr.
Hawai'i State Historic Preservation Officer
State Historic Preservation Division
Kakuhikewa Building, Room 555
601 Kamokila Blvd.
Kapolei, HI 96707

From: Detachment 2, 18 FSS/CC
515 Tinker Road
Waimānalo HI 96795

SUBJECT: Proposed Undertaking - Closure of Cesspools and Implementation of Wastewater
Management and Treatment Measures at Bellows Air Force Station

Dear Mr. Aila,

As stated in our previous correspondence with your office, dated August 5, 2013, the U.S. Air Force is preparing an Environmental Assessment (EA) under the National Environmental Policy Act (NEPA) for the closure of 29 large-capacity cesspools (LCCs) on Bellows Air Force Station (AFS), and the provision of alternate methods of treating/disposing of wastewater formerly routed to the LCCs. The EA is entitled "Closure of Cesspools and Implementation of Wastewater Management and Treatment Measures at Bellows AFS, in Waimānalo, Ko'olaupoko District, O'ahu Island, Hawai'i." As a federal undertaking, this proposed action is subject to the requirements of 36 Code of Federal Regulations (CFR) Part 800, regulations implementing Section 106 of the National Historic Preservation Act (NHPA) (16 U.S. Code Section 470). The Air Force has applied the criteria of adverse effect and, based on the documentation provided in Enclosure 1 and in accordance with 36 CFR § 800.5(b) and (c), now proposes a finding of no adverse effect for your review.

The three action alternatives and the "no action" alternative are described in greater detail in Enclosure 1, "Description of the Undertaking and Finding of Effect, Large Capacity Cesspool Conversion at Bellows AFS." The current "preferred alternative" is Alternative 1 which proposes to install advanced onsite wastewater treatment systems and dispose of treated effluent using drip irrigation. The existing LCCs would serve as seepage pits for emergency backup disposal of treated effluent. At this time, no decision has been made regarding the alternative that will be selected for implementation. As all three action alternatives would have substantially similar effects upon historic properties if implemented, our findings and request for concurrence are applicable no matter which alternative is ultimately selected.

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DEPT. OF LAND &
NATURAL RESOURCES
2014 APR 17 A 9:41

Appendix F
ESA Section 7 Consultation Packet



DEPARTMENT OF THE AIR FORCE
PACIFIC AIR FORCES

24 Mar 14

MEMORANDUM FOR: Mr. Aaron Nadig
Fish and Wildlife Biologist
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard
Room 3-122
Honolulu, HI 96850

FROM: Detachment 2, 18 FSS/CCF
515 Tinker Road
Waimānalo HI 96795

SUBJECT: Section 7 for Proposed Large Capacity Cesspool (LCC) Conversion Project on
Bellows AFS, Honolulu County, Hawai'i.

1. Bellows Air Force Station (AFS) requests your concurrence on a "no effect" determination for federally listed species for a proposed large capacity cesspool (LCC) conversion project on Bellows AFS, Honolulu County, Hawai'i.
2. The Project involves closing 29 existing LCCs following Hawai'i Department of Health (HDOH) protocols and replacing 26 LCCs, which are connected to operational cabins, with advanced wastewater treatment systems. Three cabins connected to LCCs were demolished; consequently new wastewater systems will not be installed at these locations. Advanced wastewater systems are the preferred treatment system because they offer a cleaner effluent than traditional onsite systems such as septic tanks. Maps of the project locations are attached.
3. Bellows AFS considered three alternatives for the secondary treatment of wastewater, once it has been treated by the advanced treatment system. These alternatives include disposing of treated effluent through subsurface drip line, converting the LCCs to seepage pits for secondary treatment and storing the wastewater in above ground storage tanks to be used in irrigation. The preferred alternative is to dispose the water through a drip irrigation line. The project would require approximately 1,250 cubic yards of excavation and would impact a combined 2 acres of land. Construction activities are expected to take 6 months overall, or around 7 days per cabin.
4. We reviewed the U.S. Fish and Wildlife Service's *Species by County Report for Honolulu County* on December 12, 2013, provided online. While a number of federally protected species may exist on Bellows AFS, these species exist primarily in the wetland and marine habitats found on base. The project area is comprised mainly of disturbed open area and located approximately 1/3 mile from the nearest wetland.

No federally-listed species are known to use the project area, and the probability of encountering a federally-listed species during construction activities is low. Consequently, we conclude the project will have "no effect" on listed species, their habitats, or proposed or designated critical habitat. We would appreciate your concurrence on our findings.

5. We appreciate your review of the enclosed information. Contact Craig Gorsuch (Bellows AFS Environmental Program manager) at (808) 259-4213 for additional information regarding this proposed undertaking. Please address any written comments to (craig.gorsuch.ctr@us.af.mil).

A handwritten signature in black ink, appearing to read 'Robyn R. Matthews', with a large, sweeping flourish extending to the right.

ROBYN R. MATTHEWS, MSgt, USAF
Superintendent

3 Attachments:

1. Figure-1-1_Bellows AFS Site_Overview
2. Figure-1-2_North_Cabins
3. Figure-1-3_South_Cabins

Rau, Michelle/COS

From: GORSUCH, CRAIG H CTR USAF PACAF 18 FSS DET 2/Environmental
<craig.gorsuch.ctr@us.af.mil>
Sent: Tuesday, March 25, 2014 8:07 PM
To: Rau, Michelle/COS
Cc: Manz, Richard/HNL; CASEY, MATTHEW C CTR USAF PACAF AFCEC/CFPE; GRANNIS, WILLIAM E GS-13 USAF PACAF AFCEC/CFPE
Subject: RE: USFWS Section 7 Consultation
Attachments: 09 Section 7 Letter_LCC Conversion_BAFS_03.24.14.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Michelle,

I just spoke with USFWS Jiny Kim (Biologist, Pacific Reefs National Wildlife Refuge Complex (NWRC)) regarding the attached Section 7 letter for the LCC conversion project. Jiny asked me about the location of possible subsurface drip lines. I described that the sub-surface drip irrigation would be placed in the proximity of the cabins back from the sand dunes because 1) a shorter distance benefits gravity feed and 2) the sand dunes are a dynamic ecosystem with accretion and erosion.

Jiny described that the FWS does not provide concurrence letters for non-regulatory/non-statutory areas of concern with no effect. Bellows AFS should keep the "no effect" letter on file and also maintain a record of today's verbal telephone conversation that described the FWS has "no concerns with the LCC conversion project"

Mahalo,
Craig

CRAIG GORSUCH, LEED AP
Colorado State University
Environmental Program Manager

Bellows AFS
Det 2, 18 FSS/CEE, Contractor
DSN: 448-4914; COMM: 808-259-4213
MOBILE 808-927-1867
email: craig.gorsuch.ctr@us.af.mil

-----Original Message-----

From: Michelle.Rau@CH2M.com [mailto:Michelle.Rau@CH2M.com]
Sent: Tuesday, March 18, 2014 10:35 AM
To: GORSUCH, CRAIG H CTR USAF PACAF 18 FSS DET 2/Environmental
Cc: Richard.Manz@CH2M.com; CASEY, MATTHEW C CTR USAF PACAF AFCEC/CFPE
Subject: RE: USFWS Section 7 Consultation

Appendix G
Community Outreach Meeting Transcripts

BELLOWS AIR FORCE STATION CESSPOOL UPGRADE
PUBLIC MEETING

Thursday, August 29, 2013

Waimanalo Elementary and Intermediate School
Waimanalo, Hawai'i

Reported by: Jessica R. Perry, CSR, RPR

1 P R O C E E D I N G S

2 MS. REX: Christine Rex. My question is
3 regarding the alternatives. Are they in any type of
4 priority right now or how are you evaluating them?
5 Are you evaluating them all the same at this point in
6 time.

7 MS. RAU: Right now we're in the process
8 trying to eliminate alternatives. We're taking the
9 full list and then we're going through and applying
10 them to the selection criteria and determining, you
11 know, what kind of falls out. We're still in the
12 early process and have a lot of team efforts
13 [inaudible] -- but as of right now, this is pretty
14 much all -- [inaudible].

15 MS. REX: Following question is that once
16 you guys get to a draft final version of this, will
17 the list of alternatives still go to someone like
18 that?

19 MS. RAU: Uh-huh, no. We will most
20 likely have to --

21 THE COURT REPORTER: I'm sorry, I'm
22 having trouble hearing you.

23 MS. RAU: We will most likely have three
24 or four alternatives that we'll do a full analysis on,
25 and then we'll also have, hopefully, a preferred

1 alternative, but we're still working on that. We're
2 still in this stage right now.

3 MS. REX: And will the regulators have an
4 opportunity to provide comments on the list as it is
5 right now or in terms of a formal comment period
6 versus once they have the draft?

7 MS. RAU: The regulators, you mean the
8 official --

9 MS. REX: Mostly, yeah.

10 MS. RAU: -- and the SHPD --

11 Well, we have initiated consultation
12 already with them. As they -- as we weed out the
13 alternatives, they're not going to look at this large
14 of a list, they will get the list of what the Air
15 Force has determined are the actionable alternatives,
16 the things worth bringing forward, so.

17 MR. GORSUCH: I'd like to add, the
18 alternatives that were considered and set aside will
19 be identified with the regulators in the DOPA.

20 MS. RAU: With the rationale of why they
21 were taken out.

22 MR. GORSUCH: With the rationale. So
23 everything will be there for the regulators to see.
24 But then there will be a more in-depth consideration
25 of the alternatives that will be moving forward.

1 MS. RAU: Yes.

2 MS. REX: I do have another. Regarding
3 the --

4 THE COURT REPORTER: I'm really having a
5 hard time. The acoustics are terrible.

6 MS. REX: Regarding the systems that have
7 already been converted, you said that there were 56,
8 52, whatever it was previously, for the systems that
9 have been converted, you said some have been converted
10 septic, some have been converted to drip system, what
11 is the current status of those two systems? How are
12 they both operating with the Bellows environment? Is
13 one proving to work out a little bit better versus the
14 other? Do you guys have feedback on how those current
15 systems are --

16 MR. GORSUCH: I can offer --

17 MS. RAU: Craig might have a better
18 answer for that.

19 MR. GORSUCH: The cesspools, 52 cesspools
20 is the number, I'm trying to remember, that have been
21 upgrade to a septic and leach field system.

22 MR. MANZ: Give or take a couple. We're
23 not exactly sure, but it's 50, 52, 54, somewhere in
24 that range, and as I mentioned, these 27 are the last
25 27 remaining out of that.

1 MR. GORSUCH: And that alternative is
2 working quite well. They're built large enough so
3 we're not having to pump out solids very frequently at
4 all. They have a leachate field that we inspect on a
5 regular basis to make sure. We open up and to see
6 that it's clear?

7 MS. REX: And that's for all of them or
8 did you say some are --

9 MR. GORSUCH: That's for 52. And then
10 there are 27 -- and then there also are two what are
11 called permitted underground injection control
12 systems, and for those systems, they're kind of unique
13 because the former cesspool is still in use as a
14 seepage pit, so what happened was the -- they
15 installed a septic tank and then the overflow or
16 leachate from the septic tank drips into the former
17 cesspool.

18 And it's called permitted because the
19 state of Hawaii requires annual management
20 requirements. We're required on a weekly basis to
21 open it up and to inspect it. We're required to
22 record the flow that goes into it, and once a year
23 we're required to pump it out and do an annual report
24 where we evaluate its flow rates and its -- how many
25 solid, how much solids in it, to just ensure it's

1 working.

2 And because of those management in place,
3 those management plans in place, the state permits and
4 allows that kind of seepage pit. And there are two of
5 those, one of which, one cabin of which was
6 demolished. So one of those needs to be abandoned,
7 it's going to be abandoned, it's not in use.

8 And at the same time, the intention is to
9 move away from seepage pits. There's a -- EPA is
10 discouraging seepage pits because they can become in
11 direct contact with the groundwater and maybe not
12 allow enough time for biological decomposition. So we
13 are moving away from seepage pits. So we're not
14 considering seepage pits really an option for an
15 alternative moving forward in that traditional sense
16 of sending leachate -- sending, you know, waste
17 directly to seepage pit.

18 MS. REX: And how are the new drip
19 systems, I mean, the current status of them? Does the
20 Air Force loves them, you guys think they're fabulous
21 and they're doing great things for the native
22 vegetation, I assume?

23 MR. GORSUCH: Well, like a recirculating
24 system where you have a drip system going into a
25 seepage pit type arrangement.

1 MS. REX: Well, I guess I don't know the
2 exact --

3 MR. MANZ: One thing --

4 THE COURT REPORTER: And everyone just
5 has to talk one at a time.

6 MS. REX: I didn't know what the current
7 exact configuration of the drip system is. So, I
8 mean, is it actually dripping into a field? Is that
9 how you have it right now?

10 MR. GORSUCH: No, now it's either going
11 into a leach field, underground, with perforated PVC
12 pipes, or it's going into the two -- well, the two
13 permitted USC's are going into a seepage pit.

14 But one of the alternatives we're looking
15 at is to possibly look at possibilities for reusing
16 gray water for irrigation, for example. And there's a
17 lot of interest in the Air Force in that kind of
18 alternative.

19 MS. REX: And is that one of the
20 alternatives? It is, right?

21 MR. MANZ: If you look at the list
22 here --

23 MS. RAU: Mostly focus on the treatment
24 of black water, so we are including the gray water
25 separation.

1 MR. GORSUCH: Yeah, the Air Force is
2 aware of some success cases of using gray water, using
3 a marsh or a forest to process wastewater. So one of
4 the considerations for the gray water is to consider
5 those kind of alternatives.

6 MR. CASEY: My name is Matt, and I just
7 want to bring up two points. One is that converting a
8 cesspool to a seepage pit, the alternative that's on
9 the board here says close the LCCs, install a septic
10 tank with a seepage pit, that, in my mind, is not
11 feasible. It would have to be aerobic or advanced
12 wastewater treatment system.

13 MR. MANZ: Is that the recirculating --

14 MR. CASEY: No, it wouldn't be a
15 recirculating. Consider it to be a pretreatment.
16 Septic tanks don't treat water, they just separate the
17 solid, so it would have to be an aerobic treatment
18 system. And the Department of Health, there's success
19 stories about cesspools being converted to seepage
20 pits, and then the water that actually goes in has
21 living aerobic bacteria.

22 But the Air Force, you know, right now we
23 want to close the cesspools, we don't want to reuse
24 them, but I think we need to define that more in the
25 alternatives where it's not a septic tank, it would be

1 an aerobic, but I think maybe the selection criteria
2 needs to say we need to remove the cesspools, not
3 convert them to a seepage pit. Because I know the
4 Department of Health and EPA will allow that. It's
5 happened all over this island.

6 MR. GORSUCH: Some of the systems over --
7 I'm sorry, this is Craig Gorsuch. Some of the systems
8 at Hickam right now where they have aeration and
9 circulation and some of them, they drop chlorine
10 tablets in as part of the treatment --

11 MR. CASEY: They do.

12 MR. GORSUCH: -- on a regular basis.

13 MR. CASEY: They do.

14 MR. LAWRENCE: Can I add something in
15 that respect?

16 You know, I've been working with aerobic
17 systems and looking at all of the things for the last
18 year and a half now, and if the water that's coming
19 out of the treatment unit, the aerobic unit is clean
20 enough, it actually will remediate the soil that's
21 under the cesspool. That's been bacteria that's
22 coming out biologically active, it's gray water, but
23 the gray water is infinitely cleaner than the water in
24 there and actually remediates that surrounding
25 environment.

1 So closing cesspools, it does make a lot
2 of sense to go to something different, to upgrade, but
3 at the same time you can upgrade and still solve the
4 problem that's under need. Just closing the cesspool
5 doesn't get rid of what's under there and been there
6 for many, many years.

7 MR. KALAMA: Thank you. That was my
8 question, you just answered it.

9 MR. KANE: In the modern age you have
10 antibacterials and added chemicals, which do not get
11 taken out of the water, so that's like a whole other
12 dimension of what actually goes down and ends up
13 affecting the hormonal systems of natural wildlife in
14 the ocean and in every place.

15 MR. LAWRENCE: Again using a chlorine --
16 using any additives is -- the technology of this is
17 beyond that nowadays. The only additive you need for
18 a system to create clean water is our natural, you
19 know, our natural microbes and putting it through
20 aerobic and anaerobic, that whole process can
21 basically -- and then UV treatments, a small cost, you
22 can get water that's 99.9 percent bacteria-free and
23 will actually clean up there without those harsh
24 chemicals, and they're still going to end up in the
25 ocean.

1 MR. KALAMA: So when these cesspools are
2 going to be closed and not taken out, how much is that
3 going to affect the soil? Because that means
4 everything stays where it's at. You know what I mean,
5 if you contained all this chemical and this waste and
6 you close it, now it sits there, there's erosion
7 underneath this `aina and the soil expands and it's
8 sometimes hardens because of chemicals, now it's going
9 to affect anything that grows and roots down to it.

10 So how are they sealing it, how are they
11 closing it off, and how long does it sit there for?

12 MR. CASEY: The Department of Health has
13 procedures and rules and regs for closing the
14 cesspool. Basically you need to assess the integrity
15 of the cesspool. If it's structural integrity, then
16 you basically backfill, you clean it up and backfill
17 it. So all the subsurface that's around there,
18 there's no remediation involved, it's just a backfill
19 of the cesspool in place. That's the Department of
20 Health wastewater branch rules and regs.

21 MR. KANE: Living somewhat in the wild in
22 my decades ago, certain trees particularly seem to
23 really fill in so thickly, the tanks that aren't being
24 used pretty much holds everything, so I don't know if
25 like planting certain trees on top of that really

1 knock everything.

2 MR. KALAMA: My concern is -- hi. This
3 is Kahu Ryan.

4 I work with different environmental
5 groups and other contractors that are looking for
6 bombs and ammunitions like we did out at Bellows,
7 they're doing it out at Maunawili below the Pali. And
8 their concern and my concern is a lot of things have
9 grown on to these target practicing bombs and
10 everything and so if you uprooted it, you don't know
11 what you're going to get with it. And that's why my
12 concern was everything -- nature is affected by
13 everything we do, and just because we seal it doesn't
14 mean it doesn't get attacked by nature. Then when
15 nature gets ahold of it, it starts spreading all that
16 mess elsewhere.

17 So I've seen this for myself. This is a
18 small island, and the concern was this is why I wanted
19 a treatment center rather than cesspools, and because
20 it's just going to linger and linger and before you
21 know it, we're just eroding at all capacities of
22 everything because we don't know what these chemicals
23 are going to do being stored up and it leaks, we don't
24 now how much of that is going to continue on.

25 So that's why I was kind of leery about

1 cesspools. We need to do something, but I would be
2 for a treatment center to take this elsewhere that can
3 handle this capacity of chemicals, but unfortunately
4 we're looking at budget and looking at different ways
5 of using different types of cesspools and chemicals
6 and all that, but I don't care what we use, it's still
7 going to affect the ground we're walking on.

8 You're standing there -- it's just like I
9 told the Marine commander at one time, before the one
10 we have now, you know, would he put his children
11 there, your family? I said we're all there, so even
12 though we have the most brilliant ideas, it doesn't
13 mean it goes away. It just means you're still exposed
14 to something that we're not known to, and I don't care
15 who regulates it, it doesn't go away.

16 Because we've done so many
17 self-destructive all over the world, everybody has
18 tried something all over the world, not just us. And
19 it affects every land that you're at. I mean, there's
20 so many dead seas now it's unbelievable. Why? Why is
21 that happening? Mankind is self-destructing itself.
22 We cannot -- everybody thinks if we just cover it up,
23 put it in the hole, it's going to go away and it
24 doesn't. I know it doesn't.

25 Now we're unburying the bombs now. We

1 did it at Bellows, we're doing it at the Pali. I
2 mean, they're clearing land after land out there.
3 It's just unbelievable, you know.

4 So -- and the cultural perspective, we're
5 looking at not just the `aina itself, but we're
6 looking at more or less agriculture sub
7 sustainability, but we can't plant if there's
8 something there, you know what I'm saying? We want to
9 put natural plants out at Bellows for the sand dunes
10 and everything. If we use gray matter, we don't know
11 what's in it. If there's things being buried, it goes
12 down to the roots of that and the roots begin to --
13 something erodes eventually along line, are we burying
14 our future of self-destruction is what I'm trying to
15 share.

16 So if we can plant treat it and it avoids
17 all those years of expenses -- Kalaheo Avenue in
18 Kailua, they put this sewage pipe in finally, but
19 after so much erosion, they're constantly fixing
20 Enchanted Lakes and Keolu Hills because everything is
21 eroding underneath it. It's continuous. Pretty soon
22 we're going to create this big earth wormhole where
23 all of this is going to sink. This is an island.
24 This is not land mass, you know, like we're in a --

25 MR. DYE: My name is Tom Dye. Kahu, you

1 said you had a question for me earlier?

2 MR. KALAMA: Yeah, on archeology. Are
3 you working with local archeologists? I know Kim
4 Kalama was out there at Bellows and --

5 MR. DYE: Kim is one of my employees.

6 MR. KALAMA: Okay, then I'm happy.

7 MR. LAWRENCE: Can I jump in? As a
8 citizen, okay, so, you know, I've been teaching here
9 for a long time, I understand the history of the
10 community and Bellows and they don't always see eye to
11 eye. And I think that Bellows has an opportunity here
12 to create a model that is sustainable, forward
13 thinking, affordable and, you know, allays the
14 community -- I don't know the word, but basically
15 addresses the communities's fears and worries and
16 solves that and solves the biological problem of going
17 into the ocean, and I think it can be done relatively
18 cheaply.

19 Some of those alternatives are not cheap,
20 and I don't think as culturally sensitive as -- you
21 know, forget this unit, individual units for each
22 cabin, I think they can do what you're saying is treat
23 everything back to clean, pure water, you don't want
24 to drink it, but you can plant native plants, you can
25 do drip fields, you can use advance drip, which is,

1 you know, really small just a little trench. You
2 know, I've already talked to -- I forget, his name is
3 Matt, but he owns the native plant garden in Kaneohe,
4 and he grew up in Waimanalo, and he wants to be part
5 of the project and he wants it to be an educational
6 center, not just a recreation center, but a place
7 where people can come and see what's possible with the
8 resources we have, which is water and human
9 fertilizer, basically.

10 If you get back to that, you can do lots
11 of things and you can incorporate it into a wetland.
12 You don't have to go that far. You can just do
13 individual plots where plants are working to clean
14 whatever is in the water that's left, but it's
15 nothing, you show people there's a way to do it that's
16 sustainable and definitely affordable and culturally
17 sensitive at the same time.

18 MR. KALAMA: Comment on that. Kahu Ryan.

19 You know, in the ancient days we didn't
20 have soap, shampoo. We had natural nature flowers and
21 roots that we used. We didn't have McDonald's and all
22 these chemical foods now that we have. We had natural
23 grown items, organic gardens from ourselves. And our
24 bodies could excrete or shed some of this waste, but
25 it wasn't so pollutant or chemical wise. But now we

1 have medicine in us, we have hairsprays on us, we have
2 deodorant and soap on us that still goes into the
3 system, and now we have to find another chemical to
4 try to, you know, break it down. And then we're
5 forever doing some -- we're going in circles right
6 now, like guinea pigs running on a wheel.

7 But the thing is, back in the ancient
8 days, I mean, they buried their feces. It was noted
9 that the wives of the kupunas would gather up
10 everybody's waste and bury it. It was buried in
11 baskets and gourds, and as they disintegrated it was
12 already filtered out. So, you know, in the ancient
13 days in all races all over the world there was some
14 type of filtering system that was natural, but when we
15 became technology and chemicals and materials and all
16 these matters that come around today to flying an
17 airplane and driving a car, we have overdid our earth.

18 So, now how do we fix it or how do we
19 delay it or how do we -- put a Band-Aid on it?

20 MR. KANE: With that thought, there's an
21 opportunity to really rise up to a different protocol.
22 Nobody using the facilities should be allowed to use
23 anything that's not biodegradable, no antibacterial,
24 no chemicals. So you start in the beginning so you
25 don't have to use any new chemicals, genetically

1 modified bacteria that can handle this stuff.

2 MR. KALAMA: I see the exchange now. It
3 ain't gonna happen.

4 MR. CASEY: There are --

5 THE COURT REPORTER: Can you turn towards
6 me, please?

7 MR. CASEY: Yes, sorry.

8 There are technologies out there that I'm
9 aware of and the technologies themselves don't
10 incorporate any chemicals that uses air and it uses
11 plastic media within the system to grow bacteria that
12 come from your feces, it's already inside of you, and
13 all it incorporates is air, plastic media and when it
14 comes out of the system it's zapped through a UV light
15 and that UV light kills any of that McDonald's crap,
16 any of the pharmaceuticals, anything else in your
17 system.

18 By the way, plants don't take up viruses
19 and things like that. Plants only intake certain
20 things. And so you can never undo what people are
21 eating and what's going into the environment through,
22 you know, what you just described, but you can try to
23 do the best thing possible. Either that or you just
24 tie it into the sewer system and it's going to end up
25 in the ocean anyway, so.

1 MR. KALAMA: Which I've seen on the other
2 side of the island.

3 MR. LAWRENCE: I'm surprised sewer --
4 this is Josh -- I'm surprised sewer is an option. I'm
5 not trying to confuse anything, but that just seems so
6 intensive, labor ground. It doesn't really address
7 trying to do something better, which is treat
8 wastewater a better way. Because it is possible and
9 it is -- it's not the future, it's here now, and to
10 just go back to the status quo, which is to pump it
11 through a septic -- pump it through a tube back to a
12 waste treatment plant and back to the ocean just
13 doesn't seem like a logical thing to do in this
14 situation.

15 Because so many people use this, and I
16 think it's such an exposed location for the community,
17 and not just Waimanalo but other people come here, and
18 it could be a model for the rest of -- I know that the
19 state park system, they're looking to upgrade their
20 parks and try to, you know, put in better systems
21 Malaekahana where they have Port-a-Potties now because
22 their cesspools are [inaudible].

23 Many people are interested in cleaning up
24 this aspect of this part of Hawaii, and saving water
25 is one of them. So reusing it for irrigation makes a

1 lot of sense, and, you know, there's definitely ways
2 to do that.

3 MR. KALAMA: Kahu Ryan again.

4 Yeah, I'll tell you what, the Air Force
5 has been very transparent and capable of showing us
6 options of what's happening, that that is not our
7 problem. I mean, you're just one-sixteenth of our
8 problem, the rest of the problems are agricultural and
9 other chemicals that are added to your system going
10 out in here. So it's not just what the sewage waste
11 is, it's what your environment is considered, and then
12 this is what we're finding with GMO, because a lot of
13 the chemicals went into the ocean and killed a lot of
14 fish.

15 We don't have fishing like we used to.
16 We don't have the lobsters and -- hardly and then
17 killing all the squids and turtles and everything out
18 there, but the thing is this is why you don't have a
19 big crowd right now from the neighborhood board
20 because they already know what the problem is, but
21 they're happy because you're making adjustments
22 according to what the state and federal government is
23 asking you to do, so nobody is going to grumble about
24 that. You're not adding more pollution, you're
25 actually trying to filterize everything in a proper

1 way. So you're not going to have that disagreement.

2 The only concern we're at is how do we
3 self-sustain ourselves without killing ourselves. So
4 that's where we're at right now, and that's why from a
5 cultural perspective -- I know Kim and what she does.
6 Are you going to work with -- what's his name from the
7 Air Force?

8 MR. GORSUCH: Jeff.

9 MR. DYE: He oversees, yes.

10 MR. KALAMA: I'm even more happy.

11 MR. DYE: I like working with Jeff, too.
12 I think he's a very straight guy. And he knows his
13 stuff.

14 MR. KALAMA: The reason why I ask is that
15 I don't want -- when they find things as they're
16 digging, I don't want to put it in the paper that they
17 found bones. I want to keep it subtle until we find
18 everything at one time and then we can expose that.
19 We just need to keep a lot of things...

20 MR. DYE: This is Tom Dye again.

21 Have you been involved with the processes
22 when we find bones?

23 MR. KALAMA: Oh, yes, I was called in
24 when we did it when the bomb site was discovered.

25 MR. DYE: Yeah, so you know how that

1 works, and it involves the community very, very early
2 stage, and, you know, I've been at this for 40 years
3 now, actually 45 years and --

4 MR. KALAMA: You're telling your age.

5 MR. DYE: Every year. And there's been a
6 huge change in that. Back when I was young,
7 archaeologists were making decisions about what
8 happened to the bones, Hawaiian bones, so haole boys
9 like me are making decisions about Hawaiian bones.
10 That stopped in Hawaii about 20 years ago when I
11 worked at DLNR, you know, Hale Aloha [inaudible]
12 passed the burial law and that's all changed.

13 These guys out at Bellows, they also have
14 NAGPRA that they work under, the Native American
15 Graves Protection and Repatriation Act. So they have
16 two sets of eyes on them, and in my experience, we've
17 been working at Bellows, my company, for a dozen
18 years, they handled it very well. They're experienced
19 in it and they're completely in with the community
20 when it comes to discovery, discovery of bones on the
21 base.

22 MR. KALAMA: Okay, I like that.

23 MS. RAU: Are there any further comments
24 or questions?

25 MR. MANZ: My observation is that it

1 looks like Josh has a detailed comment. I appreciate
2 that, writing it down. I would like to see everybody
3 else write their comments down.

4 MR. KALAMA: Oh, I have one question.
5 Hi. This is Kahu Ryan.

6 When they do the EPA or EIS or whatever
7 they're going to do, how much of this spans, just the
8 local area where the cabins are or what type of EIS?

9 MS. RAU: You mean it's an environmental
10 assessment, and the environmental assessment will look
11 at all the resources that are affected. So for
12 different resources it's different areas. So for --

13 MR. KALAMA: Because you all are sharing
14 the Marine Corps, you're sharing the National Guard,
15 and then you're sharing, you know, beach area where
16 they're utilizing that area. I don't even know if
17 Bellows was responsible for the campsite area, because
18 those two sewage areas, I don't know if it met the
19 standards that -- do we know?

20 MR. MANZ: Public beach?

21 MR. KALAMA: Yeah, that's off base.

22 MR. MANZ: I'm not sure that's a part of
23 this.

24 MS. PATRICK: Tiffany Patrick McCord.

25 Those are the city and county buildings,

1 so the city and county manage those two facilities,
2 like what we use for makahiki.

3 MR. KALAMA: No wonder.

4 MS. PATRICK: And I believe that was
5 upgraded fairly recently.

6 MS. RAU: And the focus of this is EIA is
7 the 27 cabins.

8 MR. KALAMA: Excuse me. Kahu Ryan.

9 You know, I know everybody does things in
10 sections, it's like a puzzle, okay, the city and
11 county is a puzzle, the state is a puzzle, the
12 military is a puzzle, but I don't know if we're all
13 driving at the same time. It's like putting a car
14 together and none of it is attached, and how do you
15 drive a car? So I don't know if we're settling the
16 EPA, if there's other matters around that could affect
17 all of it. I'm not sure.

18 MS. RAU: One of the aspects that we look
19 at when we're doing an EPA document, it's called
20 cumulative impact, so we actually take an effort of
21 looking at all of the resources and all the activities
22 occurring around what our proposed action is, and so,
23 yes, we will try to do that.

24 MR. KALAMA: Yeah, because Sherwood
25 Forest, which is right next door to Bellows, that's

1 cesspool. And that beach lot is all cesspool. So all
2 of this -- not only one section will be affected, all
3 of it will be affected. You know, it's all cesspool.

4 MR. CASEY: This is Matt.

5 There's two different definitions for a
6 cesspool according to the EPA, the Environmental
7 Protection Agency. There's a large capacity cesspool,
8 which is right now illegal according to the EPA Clean
9 Water Drinking Act, and that definition is two or more
10 dwellings tied into one cesspool or 20 or more users a
11 day.

12 So in the case that we have here, we have
13 cabins that are duplexes, so they're considered two
14 dwellings tied to one cesspool. The cesspools you're
15 talking about at Sherwood Forest and next door to that
16 are considered single dwelling cesspools and the state
17 of Hawaii hasn't ruled those illegal yet. There's
18 over 150,000 of them in the state.

19 MR. KALAMA: And they're worried about
20 you guys.

21 MS. REX: They know where the money is
22 going to come to fix it.

23 MR. LAWRENCE: Kauai, you know, I go to
24 Kauai every year, a lot of people involved in
25 Surfrider there, and the entire Hanalei town is on

1 cesspools. And they're now wondering -- they're not
2 wondering, it's very hard to prove anything
3 scientifically, not sure of the time span, but the
4 reef is dying, diseases and all signs point back to
5 the effluent coming out of these pits, straight into
6 the water. And that's why I'm saying it's a growing
7 understanding of what doesn't work and Hawaii has more
8 cesspools in any state in the nation.

9 MR. CASEY: Combined.

10 MR. LAWRENCE: We're the most sensitive
11 place with ocean all around. So, you know, for
12 Bellows and Air Force to create a model that can be
13 looked at, like, wow, that's what we need to get to, I
14 think it's a great opportunity for -- you know, to
15 look at not just all the regulations, but the higher
16 thinking, which is to do -- it's hard to put it
17 into -- it's analysis, but to do the right thing and
18 to do the thing that the rest of the people that look
19 at this and say this is what needs to be done across
20 the state and perhaps the state start funding
21 conversions that are not noncompliant, only large
22 capacity noncompliant, the small ones, you know,
23 people can change them if they want, but they don't
24 have to, but if the state sees a better way to do it
25 affordably, it can have a wider ranging affect than

1 just this area. That's my take.

2 MR. KANE: To add to that, I fear those
3 cesspools are the least of the problems compared to
4 all the drainage systems, all the -- you know, and no
5 filtration and all going into the ocean. At least a
6 cesspool has filtration to a degree, and then the
7 storm drains in the ocean is big time problem.

8 MR. KALAMA: I mean, here's this little
9 portion, Bellows, you guys got the sliver of part of
10 the island that's doing green properly and filtering
11 things properly and then you're surrounded by illegal
12 operations.

13 MR. LAWRENCE: You have to start
14 somewhere. It can hopefully --

15 MR. KALAMA: Hopefully it will grow, and
16 I hope we can publicize this wonderful work that I've
17 been harping on since I met Craig a couple years ago,
18 and I fussed about this before, because I'm concerned
19 because the waters are so bad. You know, I've never
20 seen so many dead fish in my life when I'm in the
21 island, so people are fishing for little things that
22 are just swimming around, and they're taking it home
23 to eat it. I said, "What are you doing?"

24 You know, but, you know, but I appreciate
25 this. This is really good, and I'm on the RAB, so

1 that's -- this as we go along, I'm so glad all of you
2 were questioning things to kind of fine tune that
3 alternatives there. That was great. When we're able
4 to fine tune ourselves, it shows that we really care.
5 So your accountability is well taken. That's why
6 we're sacred.

7 MR. GORSUCH: Well, this is Craig, and
8 I'd like to acknowledge that I think these are really
9 good comments, and, you know, I really like hearing
10 the dialogue with sustainability and considering
11 Bellows as an example. Whatever happens at Bellows,
12 the community is going to know about.

13 And I'd like to defer to Michelle and to
14 Richard as to what happens with these comments, this
15 feedback?

16 MS. RAU: So we have them all documented
17 here. We will take the comments. We will address
18 every comment. As I said, we are still working out
19 the alternative analysis. We'll take what you guys
20 have offered here, and we will bring that into
21 consideration in the document. But within the
22 appendix of the document every comment will be
23 addressed.

24 MR. GORSUCH: Thank you.

25 (End of audio-recorded proceedings.)

C E R T I F I C A T E

I, Jessica R. Perry, Certified Shorthand Reporter for the State of Hawaii, hereby certify that the audio-recorded proceedings were transcribed by me in machine shorthand and thereafter reduced to typewritten form; that the foregoing represents to the best of my ability, a true and correct transcript of the audio-recorded proceedings had in the foregoing matter.

I further certify that I am not attorney for any of the parties hereto, nor in any way concerned with the cause.

DATED this 10th day of September, 2013, in Honolulu, Hawaii.

Jessica R. Perry, CSR, RPR
Hawaii CSR# 404

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BELLOWS AIR FORCE STATION CESSPOOL UPGRADE
PUBLIC MEETING

Thursday, May 15, 2014
Waimanalo Elementary and Intermediate School
Waimanalo, Hawai`i

Reported by: Jessica R. Perry, CSR, RPR

1 P R O C E E D I N G S

2 MR. MANZ: On my left is Craig Gorsuch
3 from Bellows, and Craig is the environmental lead at
4 Bellows. He's given us a lot of assistance with this
5 project, and just it's been a real good experience
6 working with Craig. And what we're going to do is
7 talk about the results of the environmental assessment
8 and also get a little bit into the design of the
9 preferred alternative.

10 But since it's a small room, maybe we
11 could just go around quickly and just have folks raise
12 their hands, say their name and who they're with. And
13 why don't we start over here with Sharon.

14 MS. MIRIKITANI: I'm Sharon Mirikitani
15 and I'm with CH2M Hill.

16 MR. DYE: My name is Tom Dye. I'm with
17 T. S. Dye & Colleagues for archaeology.

18 MS. PATRICK: I'm Tiffany Patrick. I'm
19 the community plans and liaison officer for Marine
20 Corps Base Hawaii.

21 MR. LAWRENCE: Josh Lawrence. I'm here,
22 as I said last time, I think, for two reasons. One, I
23 teach environmental science. It's a good process to
24 observe and teach my students, and I represent
25 Bluewater, which is an aerobic treatment unit.

1 MR. MONCRIEF: My name is Scott Moncrief.
2 I work for a company called EA Engineering, Science &
3 Technology. I'm also a resident of the
4 Kailua-Waimanalo area.

5 MR. RAMANLAL: I'm Kivalu Ramanlal. Same
6 which him, I'm a resident of Kailua, and I'm with MEI
7 Corporation.

8 MR. KAHOOPII: I'm Matthew Kahoopii from
9 the Big Island, seventh generation from King
10 Kamehameha I, and I'm just here to listen to what you
11 folks have to say.

12 MR. CASEY: I'm Matt Casey. I'm here
13 representing the Air Force, and I provide technical
14 assistance to the system.

15 MAJOR YOUNG: My name is Major Gabriel
16 Young. I'm here representing the Air Force, and I'm
17 the PACAF environmental legal liaison.

18 MS. RAU: My name is Michelle Rau. I
19 work with CH2M Hill. I was the lead author on the
20 environmental assessment.

21 MR. MANZ: Thank you and welcome
22 everybody. This -- the presentation is going to be
23 pretty informal. Don't have any formal presentation.
24 We have the posters up here, and, again, two parts.
25 First is the environmental assessment, we'll run down

1 the results of that, and then second part is
2 discussing the preferred alternative.

3 Couple things to know, the Air Force
4 welcomes your input, but the best way to do that is on
5 the comment cards. Fill out the comment card,
6 positive, negative feedback, suggestions, drop it in
7 the straw basket next to Sharon on the way out. I
8 always like when the reporter records because I get to
9 go back and read exactly how many ums. Have you ever
10 done that?

11 MR. GORSUCH: No.

12 MS. RAU: No.

13 MR. MANZ: Sorry. Okay. So with that
14 being said, a couple of the key folks in the room.
15 Again, Michelle Rau is the environmental assessment
16 task lead. She led the effort and the environmental
17 assessment is out for public review. You can actually
18 find it at this website up here. There was a notice
19 in the paper on Sunday. Again, soliciting input
20 there.

21 Tom Dye lead the archaeological survey,
22 which was part of the environmental assessment,
23 wanting to evaluate if the cesspool upgrade project
24 would encounter any things of cultural significance.
25 And if needed, Tom can answer questions on that.

1 And with that being said, I don't have a
2 lot to say on the environmental assessment process
3 itself. Who was here last August at our meeting?
4 Anybody? Most folks were here. There's a few that
5 weren't. Michelle gave a great synopsis of the
6 environmental assessment process, and we don't want to
7 spend hours and hours reliving that, but do you want
8 to say a few words about just the basics?

9 MS. RAU: Do you want me to -- I can kind
10 of give a quick update on what we did since the last
11 environmental assessment.

12 So we wrote the environmental assessment
13 to be compliant with the National Environmental Policy
14 Act. The point of it was to determine the
15 environmental impacts or any possible environmental
16 impacts associated with the large-capacity cesspool
17 closure and conversion and upgrade into the new
18 wastewater treatment system.

19 In order to do that, we actually came up
20 with quite a few alternatives. The alternatives that
21 we considered the most fully in the environmental
22 assessment were actually these seven that we show
23 right here. I'll go into those in just a minute, but
24 we took these seven alternatives and we compared them
25 to the selection criteria.

1 And the selection criteria was we wanted
2 a system that was cleaner than what was already
3 existing, which was the cesspools. We wanted
4 something that would minimally disturb the area,
5 because we understood that there might be some
6 significant archaeological areas in the vicinity, so
7 we want minimal disturbance. We wanted something that
8 would not impact the recreational experience at
9 Bellows Air Force Station, since that is part of the
10 primary mission there. We wanted something that was
11 also low maintenance. So we didn't want to have to
12 end up spending a lot of money keeping up a very
13 complex system. And we wanted proven technology. So
14 we didn't want something that was so new that we
15 weren't sure if it was going to work properly.

16 So based on those selection criteria, we
17 applied it to the different alternatives that we were
18 considering. Those alternatives, we were looking at
19 different aerobic -- aerobic treatment units. Then
20 also what we would do with the effluent after it had
21 been treated through the ATU. In addition to the ATU
22 units, we considered septic systems. We also
23 considered putting in large storage tanks and trucking
24 the material out. We considered an on-site package
25 plant, and we also considered connecting the system

1 via pipeline to the wastewater treatment facility here
2 in the city.

3 Based on the selection criteria, we came
4 up with these three. These were the ones that we
5 determined most meet the purpose and need and fit the
6 criteria that we needed. So I kind of alluded to it,
7 the advance treatment unit, once it goes through the
8 advance treatment unit, you still have some effluent
9 to deal with. So really the difference between these
10 three alternatives is what do you do with the effluent
11 afterwards.

12 One of them, and this one actually ended
13 up becoming our preferred alternative, was we will
14 take the treated effluent after the ATU and put it
15 through a drip irrigation system. That drip
16 irrigation system will then actually be connected,
17 will be underneath a native Hawaiian garden -- native
18 Hawaiian plant garden. That was the first alternative
19 and also the preferred alternative.

20 And then also another consideration was
21 we would take the existing cesspools, convert them to
22 seepage pits. So you would have the ATU, it would be
23 connected to the seepage pit, and then allowed to go
24 out in a more treated system that way.

25 And the finally the last one was also

1 considered fully in the environmental assessment was
2 taking the effluent and putting it into storage tanks,
3 which would then be used for another approved
4 operation further down the road.

5 Based on the environment assessment, we
6 did a full assessment on all three alternatives. So
7 we actually took these alternatives and looked at all
8 these resources. So we did an analysis on each one of
9 these resources for each one of these alternatives.
10 Based on that, we really determined that the advanced
11 treatment system tied to the drip irrigation line with
12 the native Hawaiian plant gardens really was the most
13 logical choice.

14 And so as I said, we went through all of
15 these resources. So if you do look at the
16 environmental assessment, and actually we do have
17 extra digital copies, I'm sorry we don't have any more
18 hard copies, based on -- we went through each one of
19 these resources, these were the three resources we
20 look -- took the hardest look at, and we realized that
21 these were probably the ones with the biggest
22 concerns, on the cultural resources, water quality and
23 biological resources.

24 MR. LAWRENCE: I just have a question,
25 because I'm not sure I understand, when you pick a

1 preferred alternative, does that mean that you have to
2 go with that one, or, you know, if there's a situation
3 in one particular cabin, could you combine some of the
4 alternatives?

5 MS. RAU: Actually, I should preface this
6 one, too, with the ATU drip irrigation line, we would
7 also take the seepage pit option, the -- some of the
8 LCCs will be converted to seepage pits for backup. We
9 actually are, the ATU one does actually combine the
10 two for exactly that reason.

11 MR. LAWRENCE: I just didn't know if you
12 picked one you had to do that one.

13 MS. RAU: Well, you kind of do. But the
14 reality is this one does kind of combine all of them.
15 We have pretty much, based off of the finding of the
16 no significant impact, determined that we would not do
17 the tank option. So that's based on that. Any more
18 questions?

19 MS. PATRICK: Did all seven meet the
20 purpose and need?

21 MS. RAU: To some degree or another, yes,
22 these -- these did, but based off of a screening
23 criteria. So if we -- when we -- if you look at the
24 environmental assessment, what we did was we actually
25 took the criteria, scored them and ranked them. And

1 so the ones with the lowest scores kind of fell out to
2 the end.

3 MS. PATRICK: If they all meet the
4 purpose and need, aren't you required to analyze them
5 all?

6 MS. RAU: No, you only have to consider
7 the most reasonable ones and you are permitted to,
8 based on selection criteria, the Air Force regs allow
9 for elimination of lesser options.

10 As I said, based on that, we came up the
11 drip irrigation. We did a full analysis on all of
12 these alternatives, or all these resources. Again,
13 according to NEPA regs you analyze the resource based
14 on the potential for significant impact. So as I
15 said, you know, some of these, the potential for
16 significant impact was really quite low, the ones we
17 most concerned of were these. Even based on that and
18 doing a full analysis, including an archaeological
19 inventory survey, we determined that there was no
20 significant impact for any of these three
21 alternatives.

22 That's kind of the long and short. It's
23 a hundred-page document. I'm trying to kind of
24 condense it into ten minutes, but really I think the
25 issue is if you guys have any real concerns or you

1 have any questions, this is probably a great
2 opportunity to -- to talk about it. Anybody have any
3 questions?

4 MR. GORSUCH: Thank you, Michelle.

5 It's a special evening. We're talking
6 about poop. The -- Michelle explained the selection
7 criteria and the alternatives that were considered and
8 the resources analyzed and that kind of led us down
9 the road of converting or upgrading this cesspool
10 system to one that is more effective at biologically
11 treating wastewater.

12 And a lot of people have been asking us,
13 well, why are you doing this? The cesspools are
14 actually working fine. They're operating as they were
15 intended. They're concrete or cement tank that's dug
16 into the earth and a film of bacteria forms around the
17 cement and around the soil that offers some level of
18 biological cleansing.

19 The reason that this came to surface was
20 because the Environmental Protection Agency
21 reclassified the cess -- the large -- the cesspool at
22 Bellows as residential rather than commercial. And
23 because the way the rules are written, because we have
24 duplexes and multi-dwelling units, they would fall
25 under a definition of large-capacity cesspool, which

1 the EPA is phasing out.

2 So in response to that, we're taking
3 these systems that are somewhat old, but working fine,
4 and we're upgrading them to something that we feel is
5 more efficient at treating wastewater. And that's
6 what leads us to what has turned out to be the preferred
7 alternative, which is called an aerobic treatment
8 unit, and it's called aerobic because there's oxygen
9 that is introduced into the system and that supports
10 more bacteria that operate at a more efficient level
11 for cleansing nutrients out of the wastewater, for
12 cleansing the wastewater.

13 And this diagram, I know you probably
14 can't see it from where you are, I'll try to walk you
15 through it, but the aerobic treatment unit is
16 represented by the blue circle. This is the
17 residence, the lodging, so wastewater from the lodging
18 goes into the aerobic treatment unit where the
19 bacteria are like -- because of the oxygen, they're
20 like a supercharged bacteria, they're just very
21 efficient, they're very active. And then once the
22 bacteria treat the wastewater in the aerobic unit,
23 that effluent, that treated effluent at that point
24 goes through a UV filter where it's further treated
25 and disinfected and then the effluent will be pumped

1 to various tanks.

2 But it's going to end up in a subsurface
3 drip system. These drip lines that are, you know,
4 just about six inches below the surface are in a
5 vegetated root zone where the treated wastewater can
6 be absorbed by the vegetation. The nutrients can be
7 picked up by the vegetation and the processes of
8 evapotranspiration take place. Evapotranspiration is
9 a process that allows for evaporations in the soil,
10 but also treated effluent can be picked up by the
11 plants and then transpired through the plants.

12 So that's -- the shift with this system
13 is rather than a traditional leach field where treated
14 wastewater percolates into the soil, this system is
15 designed more for plants to pick up the treated
16 wastewater through evapotranspiration and for the
17 nutrients to be used by the plant to grow.

18 So I think this system has less of an
19 impact under operated conditions. There can be --
20 there's a reduced risk of untreated wastewater
21 reaching any surrounding surface waters, and there's a
22 minor benefit to long-term benefit to native plants
23 and even to wildlife that would be associated with
24 those native plants.

25 I put the plants that we would use here.

1 We would -- we would choose to use native plants that
2 would grow in like a rain garden, or more like a
3 slightly wet environment, so we're looking at those
4 kind of plants. I put some examples up here on the
5 table of plants that could be used and also some names
6 here, like aki aki, popolo, Aiea, and ahuawa and
7 kipukai, akulikuli are some of the plants that we
8 would consider for these areas. I think the areas are
9 about 250 square feet, we're looking at for --

10 MR. MANZ: It's 375.

11 MR. GORSUCH: 375. And we're looking at
12 26 areas that are about 375 square feet in surface
13 area into out to native plants.

14 This is kind of interesting that this is
15 taking place now because totally unrelated to that, we
16 have a number of projects at Bellows that are bringing
17 back, restoring areas where native plants are starting
18 to fill in, including a wetland area, including dune
19 restoration, and this kind of adds to that -- that
20 scheme, opportunity for native plants to -- to grow
21 around this system, and that's kind of like an added
22 value to me. It actually wasn't planned that way, but
23 I think it's definitely interesting. There's
24 definitely added value. And that's this system.
25 That's kind of a quick overview of the system and kind

1 of the way it works.

2 I don't know if anybody has any
3 questions, but please feel free to ask.

4 Yes, Scott.

5 MR. MONCRIEF: Okay. With the -- with
6 the native plant selection, has there been -- it's a
7 nice, you know, variation, there's -- there's some
8 diversity there, has there been some look at back at
9 whether they're really good at fixing nitrogen and
10 breaking down bacteria or nutrients in their root zone
11 and been selected for that reason?

12 MR. GORSUCH: No, they haven't been, and
13 that's part of the work that's going to need to take
14 place. We don't have any legumes in here right now.
15 Legumes have an association with bacteria in the soil
16 for nitrogen fixation, so there's more nitrogen
17 pickup, and those are the kind of considerations that
18 we need, for plant selection, we need to look at.

19 I do think this is similar to a rain
20 garden, but the nutrients obviously will probably be a
21 heavier nutrient level, and I think the plants will
22 like that. And we do want to -- right now, and if you
23 know of some data on this, let me know, but I don't
24 know -- and I've been looking around the state to see
25 if this has been done elsewhere. I've seen

1 information where -- where companies are planning to
2 do this, but in Hawaii I haven't seen which -- maybe
3 they're using more legumes.

4 Yes. Ricky.

5 MR. BERMUDEZ: Roth Enterprises and
6 Durkin Enterprises, Chad Durkin, have recycling
7 systems.

8 MR. GORSUCH: Ricky, what do you think
9 about the type of plants that would do well in this
10 type of environment? Would -- would plants that fix
11 nitrogen do better than --

12 MR. BERMUDEZ: You need to look at
13 everything.

14 THE COURT REPORTER: You need to look at
15 what? I can't hear you.

16 MR. GORSUCH: Ricky, come on up.

17 MR. BERMUDEZ: You know, I think you have
18 to -- the EIA, see what you can do first and see how
19 big the space is and see what you're going to work
20 with. It's too early yet. I can go throw a thousand
21 plants at you guys, so.

22 MR. GORSUCH: We're looking at 375 square
23 feet per area, per drip area, and I agree we're
24 looking at having clumps of different plants, we're
25 looking at diversity, we're not just going to have

1 monoculture plants.

2 MR. CASEY: The planting of these
3 375-square-foot areas, we're going to have like a
4 two-year period where we can see what works. So like
5 the contract for whatever is going to see what works
6 and implement what works over a two-year period.

7 MR. GORSUCH: But I'd like to -- I really
8 would like to tap into Roth and to other areas that
9 have some hands-on experience with which plants --

10 MR. BERMUDEZ: That would be the system,
11 what you're talking about, for the plant system on the
12 beaches, I think the idea is to just do as much as
13 possible, you know, try to clean that whole beach, go
14 all the way to the beach. That's your goal.

15 MR. GORSUCH: Yeah, I'd like that.

16 MR. BERMUDEZ: Also go up to your streams
17 too, that's the goal, because we're trying to focus on
18 right here watershed, the ahupua`a, which is the
19 watershed, the ecosystem. Ahupua`a is the Waimanalo
20 ahupua`a, so we need to take care of our watershed
21 problem. We need to understand how the watershed is
22 working, clean it, goes to the streams, the Kahawai,
23 the stream comes way down the other streams, identify
24 problems, clean up those areas. Like you said, clean
25 up where you got -- clean up the Waimanalo Stream and

1 we've got to find a plant that's going to retain that
2 areas, and if you can get stuff growing like ulu, taro
3 on the side. And also when your water stream, coming
4 down (inaudible) where it reaches ocean, that area
5 (inaudible) that area is going to be clean, attract
6 fishing and the whole ecosystem is working, everything
7 is growing again back up the stream again.

8 So that's how a proper ecosystem should
9 be working. That's our goal for it to start growing
10 in the next couple years, for all these ahupua`as --
11 we're focusing on the moku of Koolaupoko, Kualoa all
12 the way to Waimanalo, clean up the whole land. The
13 `aina needs to be clean, and so we can get food, clean
14 land and food, we'll be healthy again. Right now
15 people are sick, land is sick.

16 MR. GORSUCH: And I like that, and I like
17 using the wetlands that are nearby as examples of
18 plants that will grow in a nutrient-rich environment.
19 There may not be a need to use nitrogen fixation and
20 legumes because there's going to be a lot of nitrogen
21 that's already available in the wastewater -- treated
22 wastewater coming out, so maybe other plants would
23 thrive in kind of that rich nutrient garden area.

24 MR. BERMUDEZ: So you want to identify
25 certain areas. That's why it's very important I talk

1 to Cynthia Thielen about the general growth plan,
2 which is supposed to include EIS or EA for Bellows and
3 all of Waimanalo, (inaudible) to what we have here,
4 (inaudible) trouble spots or grow hemp in certain
5 areas is very toxic. But I'm thinking about ways to
6 deal with that, but other places, especially where
7 the, like I said, the way folks doing by the sand dune
8 right now, grass. That's what we need to do, and like
9 I said, create a database, five, 15 years, 25 years,
10 database so, like I said, you could look back and see
11 what's working and what's not working.

12 But the thing is we've got to the kids,
13 the community involved. Kids need to be educated.
14 They need to be stewards, not us. We need to plant
15 the seeds for the kids. They're the stewards out
16 there. We need to get under their hands and back on
17 the land, so we can start malama, taking the land
18 instead of throwing beer bottles out there. That's
19 our goals over here in the community.

20 MR. GORSUCH: And I love that. I think
21 this wastewater treatment system is an isolated
22 example of how we can use the native plants to help
23 biologically clean the water. These systems are not
24 directly connected with the way the water flow through
25 the ahupua`a, but it's interrelated because it's all

1 in the same earth and it's all connected with the
2 water system. But what I really like about the system
3 is that we're picking nutrients up out of the treated
4 water into the plants and evapotranspiration into the
5 air rather than letting things percolate more into the
6 soil. So here we're really uptaking it in a way that
7 I think is unique and beneficial, and I like that a
8 lot. And that, I think, ties very much into what
9 Ricky's describing, that we're picking things up in
10 the native plants, natural plants and help supporting
11 that cycle.

12 And also there -- this is also a side
13 line, but I think variety is going to be key. We're
14 going to have 26 of these 375-square-foot islands, and
15 right now we're not thinking of having a rubber stamp
16 for the kinds of plants to go into each one, but each
17 one is going to be very different and it's a prime
18 opportunity see what works and what doesn't.

19 Yeah.

20 MR. LAWRENCE: I'm pretty sure, and you
21 guys can correct me if I'm wrong, but I think that the
22 state stipulates that if the water comes out as R-2,
23 classified as R-2, that as long as the plants that
24 you're eating are not -- you're not eating the roots
25 that go into the ground, you're eating whatever is

1 above ground, you can have edible plants there as
2 well. You can even maybe try some of them as gardens
3 for a time and see if that works, but I'm pretty sure
4 that that's the state rule, but you have to check.

5 MR. GORSUCH: And the standards we're
6 talking about is to meet the National Sanitary
7 Foundation?

8 MR. LAWRENCE: That's for the ATU level.
9 We're talking about the water that comes out different
10 classifications, the R-2, R-3, and I think R-2 you can
11 use edible plants as long as what you're eating is not
12 ever touching the water.

13 MR. GORSUCH: Okay.

14 MR. LAWRENCE: An additional way to --

15 MR. GORSUCH: That's a whole another
16 avenue to have plants that can be used for food and
17 medicine and hemp or cordage, yeah. I like that.

18 And I also see these islands being an
19 opportunity to propagate plants and to take cuttings
20 and to propagate them further and to spread them
21 around. Bellows, five years ago, was virtually a
22 monoculture of invasive plants. Very few native
23 plants. You know, aki aki grass growing along the
24 coastline, some pahoeohoe, but not -- not substantial
25 coverage of native plants.

1 Well, that's really shifting right now
2 through various projects, and this is another one
3 where I think there's an opportunity to bring back
4 more native plants and to use them for educational
5 purposes, get community involved in partnerships, to
6 cuttings, harvesting and propagation and spreading,
7 and I think that's just added value. That's not one
8 of the selection criteria, you know, that's -- but
9 that's maybe added value. Except maybe for -- to
10 minimize the potential for contaminant loading, I
11 mean, very much the plants do that.

12 MR. MONCRIEF: And maybe create
13 recreational experience, because we have programs you
14 can tie that in.

15 MR. GORSUCH: That's right. It's a huge
16 recreational experience with student groups, with
17 guests, with everybody.

18 Yeah.

19 MR. DYE: Thank you, Craig. I'd like to
20 just talk a little bit about the plants. In our
21 archaeological work over the last decade and a half,
22 we've excavated about three dozen traditional Hawaiian
23 fire pits. We've identified the firewood, the
24 kindling that were used in all of those. We have
25 quite a -- it's an impressive set of data about what

1 plants were growing right there at Bellows Air Force
2 Station over the last 700 years. We can see changes
3 over time. You can see that it's different up in the
4 north than it was down near the stream, but there's a
5 whole roster of plants. I think we've identified --
6 I'm not going to remember off the top of my head, but
7 more than four dozen different native plants that were
8 used as far as firewood and kindling. You might want
9 to look at that when you're picking out plants for
10 these islands, because you can reintroduce things that
11 aren't found there now that were popular and present
12 in traditional Hawaiian times.

13 MR. GORSUCH: I love that. Now, these
14 islands are looking at more herbaceous and less woody
15 plants, maybe grasses, ground covers, low herbaceous
16 and small shrubs, you know, rather than trees because
17 kind of the long-term maintenance that might be
18 involved. But I'd be interested in knowing what
19 your -- how you're identifying the wood and plants in
20 the --

21 MR. DYE: We have -- of course there's
22 some trees because there is firewood. But the
23 kindling is very often low shrubs, very small shrubs,
24 and we identified that as well.

25 MR. GORSUCH: Do you remember what

1 shrubs? Is that available to mention some?

2 MR. DYE: They'll be in our reports and I
3 can look it up. I'm getting too old to remember, but
4 we find things like ilima is -- is one very common
5 one, akoko, alii. There are other small ones too, but
6 those are very common.

7 MR. GORSUCH: Those are great.

8 On another side note, we've been cutting
9 up mangrove trees in the -- in the wetland area, and
10 aside from keeping mangrove propagules from
11 revegetating the entire area, using student groups and
12 other creative methods, the primary plants that are
13 volunteering in this newly recovered area, and we're
14 looking at seven acres, are native plants. And I'm
15 not even sure where all the seeds are coming from.
16 I'm assuming that they're coming from the soil. They
17 haven't been carried there by water or by birds
18 because there's not many native plants in the area
19 outside of it. This is like a seedbed that's 50-plus
20 years old.

21 MR. DYE: 50 years is nothing for a seed.
22 We're doing work over in Ewa where we're clearing off
23 kiawe and opening up areas that haven't been open for
24 200 years and we're getting natives popping up there.
25 There's a seed bank in the ground that's viable.

1 There's also a tissue bank in the ground that's
2 viable.

3 MR. GORSUCH: A tissue bank?

4 MR. DYE: Yeah, not seeds, but plant
5 tissues because a lot of the plants are propagating
6 vegetatively and they come back. First time I saw
7 this was when H-3 was built and the archaeologists
8 were digging the old taro lo`i. They went down, oh,
9 15 feet, and the lo`i soil from the bottom sprouted
10 kalo. That hadn't surfaced for 500 years and it
11 sprouted kalo.

12 MR. GORSUCH: Wow.

13 MR. DYE: It's amazing how long nature
14 lives underground.

15 MR. GORSUCH: One of the primary plants
16 coming up in the wetlands is this popolo, and I can --
17 it's hard for me to find purple berries on it because
18 the birds get them before I get there, but the leaves
19 can be used for tea, medicinal tea, and the berries
20 are sweet. It's just amazing to see what's coming up
21 there. The java sedge is coming up like crazy, the
22 ahuawa, it's -- and none of these have been planted
23 out there. So I just -- this is completely a side
24 note, but I would like to be able to expand that into
25 these islands, 26 islands as well and to see what will

1 grow there and encourage it and encourage diversity,
2 very much encourage diversity, and get the community
3 involved.

4 Thanks. Any other comments or questions?
5 I'd like to learn more about what was growing at
6 Bellows a hundred years ago, 200, 600 in that wetland
7 area, or just in the area, the dune area in general.

8 MR. DYE: I'll send you the article that
9 has it.

10 MR. GORSUCH: We know it wasn't
11 (inaudible).

12 MR. DYE: No. We do find pine wood
13 occasionally.

14 MR. MONCRIEF: Which one?

15 MR. GORSUCH: Pine?

16 MR. DYE: Pine. And I think it's
17 driftwood.

18 MR. BERMUDEZ: You've got a lot of people
19 who are living by the water, so whatever floated up
20 was used for canoes, they used whatever, and if it's
21 sustainable, you'd have driftwood, canoe. If it's
22 rotten, you know, they would use as firewood or
23 something. But everything was used, had a purpose.

24 And the plants, they have a symbology,
25 too, so when you do plant, they go together some.

1 They support each other. So you'll find also with
2 these plants, I mean, basically shrubs which is -- you
3 look shrub you're going to find --

4 MR. KANEALA: When you find popolo
5 berries --

6 THE COURT REPORTER: What is your name?
7 I'm sorry, what is your name?

8 MR. KANEALA: When you find popolo
9 berries, you'll find lo'i, which they kind of go hand
10 in hand.

11 MR. GORSUCH: Yes.

12 MR. KANEALA: Because I've been growing
13 taro on my own and somehow the popolo berries always
14 find me. No matter where I grow taro, they just pop
15 up, because it's a real powerful medicine as far as if
16 you have breathing problems, really good things.

17 MR. BERMUDEZ: My plants are six feet.

18 MR. GORSUCH: Six feet? The ones we have
19 now are more like this tall, three and four feet.
20 Wow.

21 MR. BERMUDEZ: They're like this.

22 MR. GORSUCH: Wow. What? Wow. That
23 large? I'd like to take you both back to the wetland
24 area because not only the plants are growing there,
25 some other teachers that come back there that have

1 looked at the topography of the land and they've seen
2 some raised areas and low areas and they've scratched
3 their chin and they say were there lots of springs in
4 this area and that really looks like it could have
5 been used as a lo`i, you know, we don't know. So I'd
6 like to take you back there.

7 MR. BERMUDEZ: Well, you're going to have
8 to make kalawai, going through lo`i, this whole area
9 was all food before.

10 MR. GORSUCH: That makes sense.

11 MR. BERMUDEZ: And Kailua was all lo`i,
12 Kaneohe was all lo`i, that's what it was. And on the
13 side because it was sustaining, sustaining the people,
14 this was their food basket. There's no Safeway.
15 Everything was there, so.

16 MR. GORSUCH: It makes sense.

17 MR. BERMUDEZ: We have fishponds,
18 fishponds, so this supported millions of people. And,
19 I mean, here's there no secrets out there then. We
20 can go out there take you folks anywhere and you folks
21 can find things.

22 MR. KANEALA: Usually all the east side
23 of all the islands you'll find a lot of taro terraces,
24 and they call it -- trying to remember the sacred
25 name, because like when they went to war, this area

1 was like -- because it was so always raining and you
2 never have to really take care of anything, you can
3 take care of itself. That's why you can go pretty
4 much anywhere on this side of the island, probably
5 find taro or banana or something that you can eat.

6 So this was the most sacred area where
7 you would -- when you go to war, you can war anywhere
8 else except this one special area, and I hate to say
9 it, there's a lot of military war guys here, and
10 knowing the sacredness of this ahupua`a that we keep
11 really sacred because a lot of rain comes down, a lot
12 of -- pretty much if you were to have it -- it's
13 (inaudible) -- there it is, I knew it would come --
14 (inaudible) was a very sacred area where you not war
15 or have anything to do with war in this one area.

16 So Waimanalo all the way to (inaudible)
17 was that sacred area because of the water flow. Water
18 flow comes from our side. We feed the whole island on
19 most of the water comes from this side, guys. Can you
20 imagine that? That everybody else drinks, including
21 us. The whole island.

22 And so when you understand that, why it's
23 so sacred to our people, then you guys say, oh, we
24 dugged up this and stuff pops up, the natives never
25 left. We still here. We're trying to help everybody

1 to understand how sacred it is to keep this place
2 sacred, especially this side, because we gonna be the
3 side that pretty much feed the rest of the island.
4 Can you imagine that? So if we start growing taro
5 now, if the boats stop coming in maybe two years,
6 maybe three years, hoping we have enough food to feed
7 this island every day, no need worry about where your
8 food gonna come from.

9 And that's why this place is so important
10 to me and him. We always try to figure out how can we
11 make people live here understand how important it is.
12 That's how important it is because once the water gets
13 ruined, then let me tell you, if you go Mililani, they
14 shut down the water wells from over there because it
15 has so much poison in the water. They were drinking
16 the water, people were getting sick. So now the water
17 comes from our side. So they cut back more the poor
18 guys in Waihole and Waikane, the water gets shuts down
19 and they wondering how they can feed their taro
20 patches. Wondering why the fish are not coming
21 anymore. Guess what, gang, the fish goes from the
22 ocean like salmon and goes all the way up the river
23 and spawn and come back down again. But once we shut
24 that water down, where the fish gonna go?

25 MR. GORSUCH: Yeah.

1 MR. KANEALA: And that's what's happening
2 right now, the water is getting shut down left and
3 right by other people taking it. We got enough water
4 to come and feed everybody, just that got so much
5 straws tapped into the water wells that eventually,
6 eventually we'll have not enough water to feed those
7 riverbeds, to feed the fish, and then we have no fish.
8 Makes sense.

9 So how can we all live together realizing
10 (inaudible). It's where we try and come and say, hey,
11 you want to ring the bell and say it's very important
12 not only for me, but we talking about our children's
13 children, our children's children's children, live in
14 the beautiful paradise we call Hawaii. And listening
15 to a lot of the practitioners and kupuna still around,
16 there's a lot of them around in Waimanalo, they will
17 not come because they got railroaded before. Like
18 people say, oh, yeah, we gonna do this, but they never
19 do.

20 That's why we -- he kind of dragged me
21 here and I kind of hesitant, because I said, hey,
22 dude, I've been to these meetings. These guys will
23 not listen. And I wish that important for you guys to
24 go tell the bigger guys up there it's important for us
25 to restore these fishponds. A lot of it towards

1 Makapu, even up here through Waimanalo there's some
2 fishponds up here. There's a turtle pond not too far
3 up here where our ancestors used to eat turtle.

4 But realization, we learn all of that, I
5 know it will take just natural and just come for some
6 reason, it just comes when you do. As we keep doing
7 the right things, everything will come just naturally,
8 because I'm trying to be one with the `aina.

9 So that's my message for you guys is
10 please try to impact the big guys about bringing their
11 machines. I mean, I'd love them to go over other
12 side. They can damage that side, it's already screwed
13 up. I hate to say it that way, but you go on the
14 other side of the island, we all know, I hate going
15 down that side. Anything over that mountain, I rather
16 stay home. It's not like home anymore for me. It's
17 like going to the mainland, you know, California or
18 something like that. It's like that. That's how much
19 changed, and every time I go there, it's like, oh,
20 there's three more high rises coming up. It's like,
21 wow, when did that happen? It was just yesterday I
22 was down here, I haven't here a week, two more, three
23 more high rises popping up. Is that insanity? I
24 think so. We're not planting food. Where's the
25 craziness in all of that?

1 In my lifetime I hope that we can change
2 Waimanalo, because a lot of the people living in
3 Waimanalo are hurting, homeless. Kailua, we blame,
4 oh, more homeless. We should get them out there. If
5 you look at them, Hawaiians, my people, they hurting
6 because they no belong on the beach, a lot of them
7 live right next to the beach. They grew their taro
8 and they went right back to the beach, because that's
9 home. That's home. Let me tell you, brah, I been out
10 there in Waimanalo beach when the storm was blowing,
11 homeless, my children, that's not a place to be.

12 As crazy as it sounds, man, I would
13 rather have one beautiful home, but I had nowhere to
14 go. That's insanity. I'm Hawaiian. I love to live
15 in one beautiful home, but I can't afford it. If I
16 had a grass shack maybe in Bellows, be like yesterday,
17 because it's home. I no need go nowhere, nobody gonna
18 chase me out, nobody gonna try get rid of me. I don't
19 understand, people come here and they try to get rid
20 of the people that they fell in love with. I don't
21 get it.

22 And my heart is really deep and hurtful
23 for all these people in Waimanalo. That's who I speak
24 for. I hear the kupuna, they no come. Because the
25 military promised them a lot of stuff; never happen.

1 Bellows supposed to shut down long time ago; never
2 happened.

3 The impact to the people that live here
4 is the one that I see. Please listen to them. They
5 will come and help you with open arms and do all the
6 things if they only had a place that they can come and
7 stay because this is home. Every day stay home. Wrap
8 your head around that one. No matter what I like, I
9 feel so welcome when I meet the kupuna, hey, boy,
10 come, sit down, have some food with us. You like
11 beer? No, I can no drink. How about some soda? Feel
12 right at home, and I knew right away, that's what
13 Hawaii used to be like, especially on Oahu. Oahu has
14 changed a lot. Now everybody, so, what you doing
15 here?

16 So if the people have real good choice,
17 they always have an open door. Where you guys trying
18 to restore, pretty sure you gonna have no problem,
19 they come out in droves, knowing that they can come
20 any time, nobody gonna chase them out. That's my
21 manao for you guys.

22 MR. GORSUCH: Mahalo. Thank you for
23 sharing your message with us. I think it's very
24 important, and I think it's coming from more than
25 your -- your thoughts. It's coming through your whole

1 body, it's coming there your whole existence, your
2 whole presence. I think that's very important.

3 And realizing how interconnected we are
4 with the earth, with the plants, knowing where we get
5 our nutrition from I think is so important. I would
6 love to be able to -- with R-2 plus treated water, to
7 be able to grow plants where we could consider
8 harvesting leaves and fruit to use for nutrition.
9 That would be just music to my ears, and I would like
10 to open up the work we're doing here to everybody in
11 this whole valley and share the information and form
12 partnerships and try to expand this up and down the
13 watershed, and up and down the coastline and make it
14 available. Make it available to the whole community.

15 I know there's a lot of history and a lot
16 of tension between the military and between the
17 Hawaiian community, and I really want to be able to
18 include everybody with the information and the
19 resources and all that is happening and all this
20 learning, all of what I'm learning about. So thank
21 you for sharing your manao with us.

22 MR. KANEALA: I can ask the kupunas what
23 they think because I will have an opportunity to spend
24 some time with them because they asked me to come and
25 kuli for them. And I consider it an honor to kuli for

1 the kupunas. So I would love to talk story. Some of
2 them are very influential people. It's just that they
3 don't see a way of being always inviting without
4 being, you know, they see a military guy, oh, my God,
5 here he comes again. It was like that way back in the
6 days. You know, it's like real, argh, I do what I
7 like because I'm in the military and that's why that
8 tension was always there. Now it has been a little
9 bit more relaxed. Everybody's like, okay, we're in
10 the same boat, let's, you know, paddle together.

11 MR. GORSUCH: That's a good image.

12 MR. KANEALA: So we love to see them and
13 talk to them, see what they say. I can say, well,
14 they're trying to make these things better and they
15 want more input from you guys. And it's a great
16 possibility you might get overwhelmed. The kupunas
17 wants to be involved, but they don't know how to get
18 involved. It's because they -- like I said, there's
19 that tension between the military and the kupunas
20 because they had issues before, and they still kind of
21 have issues today because they want to be enjoying
22 this beautiful beach. You know, Waimanalo ends right
23 at what we used to call the Sherwood Forest, and then
24 the Bellows is like right there, boom, and that was
25 the separation right there, including going to

1 Bellows.

2 Today it's not as bad. You can go,
3 enjoy, but a lot of them, don't see too much locals
4 going into the Bellows because all of that happened,
5 they have that fear that somebody is going to say,
6 hey, you gotta go. Crazy, but you know, it's their
7 own home.

8 MR. GORSUCH: I'd like to talk further
9 with you outside this --

10 MR. KANEALA: I gonna talk to --

11 MR. GORSUCH: -- program, and I'd like
12 to, you know, open up educational programs with kupuna
13 in the community and with the students in the
14 community as well and yourself.

15 MR. KANEALA: Get kupuna on your side,
16 you pretty much got everybody else because they
17 usually are the hierarchies, and they tell us, okay,
18 go and we don't ask questions, we just go. So
19 that's -- that's key. And let me go talk story with
20 them because I feel that's going to be a beautiful
21 time where I can share with them what I see. Then
22 have a chance to be partnership in Bellows where we as
23 Hawaiian people should be able to go there without any
24 hassles, you know. You see somebody, some local
25 with -- I know they see some local walking around,

1 hey, brah, how's it, you guys doing? I fishing.
2 Okay, have fun. And you know, that kind of stuff.
3 That's what we like to see, because a lot of them go
4 fishing out there.

5 MR. BERMUDEZ: Very important working in
6 community. If not, like everything create a
7 partnership, with the community it's very important.

8 THE COURT REPORTER: Ricky, I'm sorry, I
9 just can't hear you. You talk so fast.

10 MR. BERMUDEZ: There's a lot of stuff
11 going on with groups and everybody needs to start
12 networking and get on the same page. And like I said,
13 it's not for us, it's for the kids and they need to be
14 responsible for the land later and taking the malama,
15 taking care of the kuleana to take care of the land.
16 And understand how to take care of it. Don't touch,
17 somebody else, slowly introduce to touching it,
18 footprint, it's okay, and, you know, teaching and --
19 but also they need to feel a sense of responsibility
20 and connection. If not, then there's disconnection.

21 MR. GORSUCH: I like that.

22 MR. BERMUDEZ: But over here, we got
23 stuff in the mountains like hundreds of years old, and
24 we have -- we have a lot of seeds and stuff, a lot of
25 old plants and stuff around, so it's usually in the

1 areas where it's not accessible.

2 MR. GORSUCH: Uh-huh. Well, thank you
3 for just sharing that wisdom with us and the intention
4 that goes along with it, and I'd like to follow up
5 with you. I have some ideas that are churning in my
6 head right now about bringing kupuna and students
7 together and military. So thank you.

8 MR. KANEALA: If we're on the same page,
9 it will be okay, I guess.

10 MR. GORSUCH: Are there other questions
11 or comments or observations or needs?

12 We do have comment cards I think you know
13 about. Please feel free to pick a comment card up and
14 either leave it here or mail it in or let us know the
15 content of that card in some fashion.

16 MR. MANZ: By June 15th.

17 MR. GORSUCH: Comments are due by June
18 15th. We started the 30-day comment period, actually,
19 I think, starts tomorrow, on the 16th, and it runs
20 through June 15th. So there's 30-day window. We're
21 trying to get as much information out as possible.
22 I've been announcing this environmental assessment for
23 a while at neighbor boards and it was also announced
24 on Monday.

25 MR. BERMUDEZ: You get anybody from the

1 neighborhood board here, from the Waimanalo
2 neighborhood board?

3 MR. GORSUCH: No.

4 MR. BERMUDEZ: I'm sorry, that's a shame.
5 Put that in your notes. That is a shame. You went to
6 the meeting Monday, right?

7 MR. GORSUCH: I did. In all honesty,
8 I've been talking about the EA since October, and I
9 handed a copy of the EA to each of the board members
10 on Monday.

11 MR. BERMUDEZ: They should have a
12 representation, even one person from the group.
13 Sorry, that's a shame.

14 MR. GORSUCH: I do think they're well
15 informed.

16 MR. BERMUDEZ: They still need to be
17 engaged and need to be present.

18 MR. GORSUCH: I would encourage that, but
19 I do think that they've been asking questions all
20 along. I don't know. I would love to see the
21 neighborhood board here.

22 MR. BERMUDEZ: That's an indication that
23 things are not -- you know what I mean?

24 MR. KANEALA: You mention military and I
25 can honestly tell you, they just -- because of what

1 happened before, and it's not your fault, they'll just
2 not come, and that's probably why you're not having
3 any turn outs, because like I said before, I remember
4 Bellows was supposed to be returned to the -- I
5 believe Hawaiian Homes. And a lot of the Hawaiian
6 community thought that they were going to have homes
7 in there, it was actually going to be built as a
8 Hawaiian community, but it never happened.

9 So I don't know what happened. I know
10 it's politics, whatever. It's still the way it is,
11 and that's why a lot of them are not coming. So I'm
12 going to try and encourage them, that's all I can do.

13 MR. GORSUCH: Please do. And from my
14 perspective I'm not -- my focus is --

15 MR. KANEALA: I know it's not your fault.

16 MR. GORSUCH: No, and I'm focused on
17 minimizing the impact on the land and taking care of
18 the land and that's really --

19 MR. KANEALA: We hear you --

20 MR. GORSUCH: -- my focus.

21 MR. KANEALA: -- and you're doing a great
22 job. I see that you guys trying to head forward, but
23 why you guys not having any community involvement is
24 because of what happened before. Because they always
25 say they gonna do something and they never do it. So

1 it's kind of one of those, yeah, yeah, there they go
2 again, they're not going to do nothing, they're not
3 going to listen to us, and it goes right back by the
4 wayside.

5 MR. GORSUCH: Yeah, I think it's
6 important. And I mean, I really do feel I come here
7 with an open heart, I feel you're coming with an open
8 heart, and I would like other members of the community
9 to feel the same welcome and freedom to do --

10 MR. KANEALA: Like I said, I'm going to
11 be meeting with them hopefully and some of them are
12 pretty influential people and talking stories with
13 them and the way the kupunas like to be talk story,
14 start making some food and talk stories, it's the way
15 they like it, and maybe by talking stories about what
16 you're trying to do, I think we can get them more
17 involved and that way they feel a little bit more at
18 ease. Working in the military, he's trying to do
19 something really good, you know, let's try and help
20 them. Get our foot in there, at least we can say,
21 hey, you know, and as more community comes in, they
22 have more say in what goes on in Bellows.

23 MR. GORSUCH: Absolutely. We're all one
24 community.

25 MR. KANEALA: Get involved.

1 MR. GORSUCH: I think that makes it more
2 personal.

3 MR. KANEALA: Yeah.

4 MR. BERMUDEZ: Do you intend on working
5 with Tina the fall season?

6 MR. GORSUCH: Yes, we're going to --

7 MR. BERMUDEZ: For the kids back into the
8 monthly, twice a month or something.

9 MR. GORSUCH: Ricky is describing one of
10 the teachers who's part of the Hui Malama O Ke Kai
11 after-school program, where students from this school,
12 Waimanalo Intermediate and Elementary and also Blanche
13 Pope come together for cultural activities after the
14 school day, and they're wrapping up their semester
15 this month. And we do programs, I try to do programs
16 with them twice a month, and we're going to kick that
17 back up in October. And they're going to be -- and I
18 want to work with both of you on that. I would like
19 to do a program with kupuna, talk story, hui malama
20 kid, and just see where that goes.

21 MR. BERMUDEZ: Education for the kids so
22 they understand what's around them.

23 MR. GORSUCH: Yeah, yeah, share, share
24 stories.

25 So thank you. I don't know if there are

1 any other comments, but I want to really thank
2 everybody for coming out and just sharing your
3 thoughts with us. It's not always fun talking about
4 poop, but I really like getting into how we're
5 connected to the environment and the impact we have on
6 it.

7 MR. KANEALA: Talking about the food.

8 MR. GORSUCH: It's not just about
9 flushing a toilet. It's not just -- you know, it's
10 about what happens after you flush it.

11 MR. KANEALA: Told me something that you
12 should remember, you're a walking ahupua`a, whatever
13 you put in your mouth. So if you eat good stuff, you
14 don't worry about what's coming out.

15 MR. GORSUCH: You eat good stuff, the
16 only thing that comes out is R-2.

17 We're done. Thank you everybody.

18 (The proceedings concluded at 8:24 p.m.)

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1 C E R T I F I C A T E

2

3 I, Jessica R. Perry, Certified Shorthand Reporter
4 for the State of Hawaii, hereby certify that the
5 proceedings were transcribed by me in machine
6 shorthand and thereafter reduced to typewritten form;
7 that the foregoing represents to the best of my
8 ability, a true and correct transcript of the
9 proceedings had in the foregoing matter.

10 I further certify that I am not attorney for any of
11 the parties hereto, nor in any way concerned with the
12 cause.

13 DATED this 2nd day of June, 2014, in Honolulu,
14 Hawaii.

15

16

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18 _____
19 Jessica R. Perry, CSR, RPR
20 Hawaii CSR# 404

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